MAY 1983 NUMBER 465 -- Part I

P-A STACKS

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Solar-Geophysical Data prompt reports

Data for April 1983, March 1983 & Late Data

Explanation of Data Reports Issued as Number 462 (Supplement) February 1983

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Solar - Geophysical Data

Part I (Prompt Reports)

NO. 465 MAY 1983

DATA FOR
APRIL 1983
MARCH 1983

Michael A. Chinnery, Director
NATIONAL GEOPHYSICAL DATA CENTER
BOULDER, COLORADO

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SOLAR-GEOPHYSICAL DATA

No. 465

Issued in two parts

Helen E. Coffey, Editor

Joe H. Allen, Chief
Solar-Terrestrial Physics Division

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DETAILED COVERAGE FOR 1982-83 PUBLISHED IN "SOLAR-GEOPHYSICAL DATA"

CODE	KIND OF OBSERVATION	1982 MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	1983 JAN	FEB	MAR	APR
A.	SOLAR AND INTERPLANETARY PHENOMENA														
A.1	Sunspot Drawings	453A 40	454A 44	455A 64	456A 58	457A 50	458A 48	459A 44	460A 52	461A 58	462A 44	463A 40	464A 38	465A 42	
A.2aa	International Provisional Relative Sunspot Numbers R_i	452A 11	453A 11	454A 9	455A 11	456A 9	457A 9	458A 9	459A 9	460A 11	461A 11	462A 11	463A 9	464A 9	465A 9
A.2c	American Relative Sunspot Numbers Ra	452A 11	453A 11	454A 9	455A 11	456A 9	457A 9	458A 9	459A 9	460A 11	461A 11	462A 11	463A 9	464A 9	465A 9
A.3a	Mt. Wilson Magnetograms	453A 40	454A 44	455A 64	456A 58	457A 50	458A 48	459A 44	460A 52	461A 58	462A 44	463A 40	464A 38	465A 42	
A.3b	Mt. Wilson Magnetic Characteristics of Sunspots	453A102	454A104	455A126	457A166	457A112	458A110	459A105	460A 83	461A 88	462A 75	463A 71	464A 66	465A 73	
A.3c	Kitt Peak Magnetograms	453A 40	454A 44	455A 64	456A 58	457A 50	458A 48	459A 44	460A 52	461A 58	462A 44	463A 40	464A 38	465A 42	
A.3d	Mean Solar Magnetic Field (Stanford)	452A 42	453A 32	454A 32	455A 56	456A 48	457A 42	458A 38	459A 36	460A 44	461A 52	462A 34	463A 30	464A 32	465A 34
A.3e	Stanford Magnetograms	453A 40	454A 44	455A 64	456A 58	457A 50	458A 48	459A 44	460A 52	461A 58	462A 44	463A 40	464A 38	465A 42	
A.4	H-alpha Filtergrams	453A 40	454A 44	455A 64	456A 58	457A 50	458A 48	459A 44	460A 52	461A 58	462A 44	463A 40	464A 38	465A 42	
A.5	Calcium Plage Drawings - Mt. Wilson or Big Bear	452A 50	453A 40	454A 44	455A 64	456A 58	457A 50	458A 48							
A.5a	Calcium Plage (Mt. Wilson or Big Bear) and Sunspot Regions	453A102	454A104	455A126	457A166	457A112	458A110								
A.5b	Mt. Wilson or Big Bear Daily Calcium Plage Indices	453A113	454A117	455A138	457A176	457A122	458A119								
A.6	H-alpha Synoptic Charts	453A 36	454A 36	456A 52	456A 53	457A 46	458A 42	459A 40	460A 47	461A 54	462A 36	463A 45	464A 34	465A 38	
A.6b	Synoptic Chart and Active Regions (Paris)	460B154	460B155	462B 92	463B 94	465B118									
A.6c	Stanford Solar Magnetic Field Synoptic Charts	453A 37	454A 38	455A 61	456A 55	458A 43	458A 44	460A 48	460A 49	461A 55	462A 38	463A 37	464A 35	465A 39	
A.6d	Kitt Peak Solar Magnetic Field Synoptic Charts	453A 38	454A 40	455A 62	456A 56	457A 48	458A 45	459A 42	460A 50	461A 56	462A 40	463A 38	464A 36	465A 40	
A.6e	Mass Ejections from the Sun	457B 73	458B 40	459B 37	460B113	461B 94	462B 52	463B 43	464B 36	465B 65					
A.7g	Hellum Synoptic Maps (KPNO)	45A144	454A 42	455A 63	456A 56	457A 49	458A 47	459A 43	460A 51	461A 57	462A 42	463A 39	464A 37	465A 41	
A.7h	Coronal Line Emission (Sac Peak)	453A 40	454A 44	455A 64	456A 58	457A 50	458A 48	459A 44	460A 52	461A 58	462A 44	463A 40	464A 38	465A 42	
A.8aa	2800 MHz - Daily Values of Solar Flux (ARO-Ottawa)	452A 11	453A 11	454A 9	455A 11	456A 9	457A 9	458A 9	459A 9	460A 11	461A 11	462A 11	463A 9	464A 9	465A 9
A.8ac	2800 MHz - Daily Values of Adj. Solar Flux (ARO-Ottawa)	452A 11	453A 11	454A 9	455A 11	456A 9	457A 9	458A 9	459A 9	460A 11	461A 11	462A 11	463A 9	464A 9	465A 9
A.8g	Daily Values of Adjusted Solar Flux (AFGL)	452A 11	453A 11	454A 9	455A 11	456A 9	457A 9	458A 9	459A 9	460A 11	461A 11	462A 11	463A 9	464A 9	465A 9
A.10a	169 MHz - Interferometric Observations (Nancay)	452A 28	455A162	454A 21	455A 30			458A 25	459A 26	460A 28	461A 32	462A 24	463A 20	464A 20	465A 22
A.10c	21 cm East-West Solar Scans (Fleurs)	452A 31	---	---	455A 33	456A 30	457A 29	458A 28	459A 28	460A 31	461A 35	462A 27	463A 23	464A 23	465A 25
A.10d	43 cm East-West Solar Scans (Fleurs)	452A 32	---	---	---	456A 30	457A 30	458A 29	459A 29	460A 32	461A 36	462A 28	463A 24	464A 24	465A 26
A.10e	10.7 cm East-West Solar Scans (Ottawa-ARO)	452A 30	453A 25	454A 23	455A 32	456A 29	457A 28	458A 27	459A 27	460A 30	461A 34	462A 26	463A 22	464A 22	465A 24
A.10f	3 cm East-West Solar Scans (Toyokawa)	452A 29	453A 24	454A 22	455A 31	456A 28	457A 27	458A 26		460A 29	461A 33	462A 25	463A 21	464A 21	465A 23
A.11g	Solar X-ray (SMS/GOES) (graphs)	457B 67	458B 35	459B 31	461B 98	461B 88	462B 46	463B 38	464B 31	465B 60					
A.12e	Energetic Solar Particles (IMP H & J) 1980-81														
A.13d	Solar Wind from IPS Measurements	---	---	---	---	---	---	---	---	---	---	---	---	---	---
A.13e	Solar Plasma (IMP H & J)	457B 66	458B 34												
A.17	Interplanetary Magnetic Field (Pioneer 12)	455A175	455A175	455A142	---	457A129	458A124	459A130	461A136	462A132					
A.17c	Inferred IP Magnetic Field	452A 40	453A 30	454A 30	455A 54	456A 46	457A 40	458A 36	459A 34	460A 42	461A 50	462A 32	463A 28	464A 30	465A 32
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B.52	Graphs of Transmission Frequency Range	453A144	454A140	455A158	456A156	457A162	458A148	459A156	460A128	461A132	462A128	463A106	464A 92	465A106	
B.53	Quality Figures Based on Frequency Ranges	453A143	454A142	455A157	456A158	457A161	458A150	459A158	460A130	461A131	462A130	463A106	464A 91	465A108	
C.	FLARE-ASSOCIATED EVENTS														
C.1a	Optical Observations Flares	452A 16	453A 16	454A 14	455A 16	456A 14	457A 14	458A 14	459A 14	460A 16	461A 16	462A 16	463A 14	464A 14	465A 14
C.1ba	Optical Observations Flares (Standardized Data) 1980			457B 76	459B 39	460B116	462B 56	463B 46	465B 68						
C.1d	Flare Patrol Observations	452A 27	453A 23	454A 20	455A 29	456A 27	457A 26	458A 24	459A 25	460A 27	461A 31	462A 23	463A 19	464A 19	465A 21
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C.1e	Flare Indices (by day) 1980			457B114	459B 86	460B150	462B 88	463B 90	465B115						
C.3	Solar Radio Waves - Outstanding Occurrences*	457B 4	458B 4	459B 4	460B 4	460B 4	462B 4	463B 4	464B 4	465B 4					
	Solar Radio Waves - Fixed Frequencies - Selected	452A 33	453A 26	454A 24	455A 34	456A 31	457A 31	458A 30	459A 30	460A 33	461A 37	462A 29	463A 25	464A 25	465A 27
C.4a	Solar Radio Spectral Obs. (Fort Davis)	453A118	454A121	455A143	456A124	457A130	458A125	459A131	460A106	461A109		---	---	---	
C.4d	Solar Radio Spectral Obs. (Culgoora)	455A163	455A170	455A143	456A124	457A130	458A125	459A131	460A106	461A109	462A 98	463A 92	464A 78	465A 89	
C.4e	Solar Radio Spectral Obs. (Weissenau)	453A118	454A121	455A143	456A124	457A130	458A125	459A131	460A106	461A109	462A 98	463A 92	464A 78	465A 89	
C.4f	Solar Radio Spectral Obs. (Sagamore Hill)	453A118	454A121	455A143	456A124	457A130	458A125	459A131	460A106	461A109	462A 98	463A 92	464A 78	465A 89	
C.4h	Solar Radio Spectral Obs. (Dwingeloo)														
C.4i	Solar Radio Spectral Obs. (Bleien)	454A145								461A109	462A 98	463A 92	464A 78	465A 89	
C.4k	Solar Radio Spectral Obs. (Learmonth)	453A118	454A121	455A143	456A124	457A130	458A125	459A131	460A106	461A109	462A 98	463A 92	464A 78	465A 89	
C.4l	Solar Radio Spectral Obs. (Palehua)	453A118	454A121	455A143	456A124	457A130	458A125	459A131	460A106	461A109	462A 98	463A 92	464A 78	465A 89	
C.5e	Solar X-ray (SMS/GOES) (graphs)	457B 67	458B 35	459B 31	461B 98	461B 88	462B 46	463B 38	464B 31	465B 60					
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D.1a	Geomagnetic Indices Kp, Kn, Ks, Km, Ap, aa, Cp	453A136	454A134	455A153	456A149	457A154	459A162	459A150	461A136	461A126	462A121	463A102	464A 87	465A101	
D.1ba	27-day Chart of Kp Indices	453A138	454A136	455A155	456A151	457A156	459A144	459A152	460A125	461A128	462A123	463A104	464A 89	465A103	
D.1c	27-day Chart of C9	462A124	462A124	462A124	462A124	462A124	462A124	462A124	462A124	462A124	462A124				
D.1d	- Principal Magnetic Storms	453A141	454A139	455A156	456A154	457A159	458A147	459A153	460A126	461A129	462A125	463A105	464A 90	465A104	
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D.1g	Equatorial Indices Dst	453A140	454A138	456A160	456A153	457A158	458A146	460A135	462A139	462A140	463A111	464A 97	465A111		
D.1h	Geomagnetic Substorm Log (Boulder)	452A 44	453A 34	454A 34	455A 58	456A 49	457A 43	458A 40	459A 38	460A 41	461A 49	462A 31	463A 31	464A 29	465A 35
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F.1a	Cosmic Ray Neutron Counts (Deep River)	453A135	455A177	455A152	456A148	457A153	459A160	459A149	460A119	462A134	462A116	463A101	464A 83		
F.1b	Cosmic Ray Neutron Counts (Climax)	454A150	454A131	457A176	457A178	462A133	462A133	462A133	462A134	462A134	462A116				
F.1e	Cosmic Ray Neutron Counts (Alert)	453A135	455A177	455A152	456A148	457A153	459A160	459A149	460A119	462A134	462A116	463A101	464A 83		
F.1h	Cosmic Ray Neutron Counts (Thule)	453A135	454A131	455A152	456A148	457A153	458A143	459A149	460A119	461A123	462A116	463A101	464A 83	465A 97	
F.1i	Cosmic Ray Neutron Counts (Kiel)	453A135	454A131	457A178	457A178	457A153	458A143	459A149	460A119	461A123	462A116	463A101	464A 83	465A 97	
F.1j	Cosmic Ray Neutron Counts (Tokyo)	453A135	454A131	457A178	457A178	457A153	458A143	459A149	460A119	461A123	465A113	463A101	464A 83	465A 97	
F.1l	Cosmic Ray Neutron Counts (Huancayo)	454A150	457A176	457A178	462A133	462A133	462A133	462A133	462A134	462A134					
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H.60	IUWDS Alert Decisions	452A 5	453A 5	454A 4	455A 5	456A 4	457A 4	458A 4	459A 4	460A 5	461A 4	462A 5	463A 4	464A 4	465A 4

Notes:

"453A 40" listed under 1982 Mar means that the sunspot drawings for Mar 1982 were contained in Solar-Geophysical Data Number 452 - Part I, beginning on page 40.

A = Part I, B = Part II.

----- = no data available.
blank = data not yet received.

*Solar radio noise bursts observed at Athens, Learmonth, Manila, Palehua and Sagamore Hill during Aug 1979 through Oct 1980 appear in Solar-Geophysical Data, Number 461, Part II, pages 103-2135.

SGD 465 Part I (Prompt)

APRIL 1983 DATA

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ALERT PERIODS
INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE
SUMMARY OF THE GEOALERT MESSAGES APRIL 1983

NO	DI	DO	WOLF	10CM	A	LOC	TOT	M	X	OUTSTANDING EVENTS	DA	LOC	DE	ALERTS
091	01	31	087	099	022	S17W19	0	0	0		01	S17W19	Q	SOLQUIET
						S12W12	0	0	0			S12W12	Q	MAGQUIET
						S07W11	0	0	0			S07W11	Q	
						S17E07	1	0	0			S17E07	Q	
						S22E12	0	0	0			S22E12	Q	
						S13E28	0	0	0			S13E28	Q	
092	02	01	094	101	017	S15W51	0	0	0		02	S15W51	Q	SOLQUIET
						S13W25	1	0	0			S13W25	Q	MAGQUIET
						S07W24	1	0	0			S07W24	Q	
						S17W06	1	0	0			S17W06	Q	
						S22W01	0	0	0			S22W01	Q	
						S14E14	0	0	0			S14E14	Q	
093	03	02	126	101	017	S14W65	0	0	0		03	S14W65	Q	SOLQUIET
						S21W44	0	0	0			S21W44	Q	MAGQUIET
						S06W38	0	0	0			S06W38	Q	
						S13W37	0	0	0			S13W37	Q	
						S19W19	1	0	0			S19W19	Q	
						S22W15	1	0	0			S22W15	Q	
						S14E01	0	0	0			S14E01	Q	
						S12E75	1	0	0			S12E75	Q	
094	04	03	101	100	016	S06W51	0	0	0		04	S06W51	Q	SOLQUIET
						S13W51	0	0	0			S13W51	Q	MAGQUIET
						S17W32	2	0	0			S17W32	Q	
						S19W28	0	0	0			S19W28	Q	
						S10W27	0	0	0			S10W27	Q	
						S12E61	1	0	0			S12E61	Q	
095	05	04	073	101	013	S12W67	0	0	0	PRESTO TENFLARE 110 FLUX UNITS	05	S12W67	Q	SOLQUIET
						S16W45	5	0	0	04/1642Z DURATION 2 MINUTES		S16W45	Q	MAGQUIET
						S19W41	0	0	0			S19W41	Q	
						S12W32	0	0	0			S12W32	Q	
						S11E45	1	0	0			S11E45	Q	
096	06	05	079	099	016	S16W58	6	0	0		06	S16W58	Q	SOLQUIET
						S20W56	1	0	0			S20W56	Q	MAGQUIET
						S10E29	0	0	0			S10E29	Q	
						S12E36	0	0	0			S12E36	Q	
						S15E71	2	0	0			S15E71	Q	
097	07	06	109	099	023	S16W72	1	0	0		07	S16W72	Q	SOLQUIET
						S19W72	0	0	0			S19W72	Q	MAGALERT
						S06W19	0	0	0			S06W19	Q	MINOR 07/09
						S10E15	0	0	0			S10E15	Q	RECURRENCE
						S12E22	2	0	0			S12E22	Q	
						S15E57	1	0	0			S12E57	Q	
						S08E75	0	0	0			S08E75	Q	
098	08	07	104	102	022	S16W85	2	0	0		08	S16W85	Q	SOLQUIET
						S08W35	0	0	0			S08W35	Q	MAGALERT
						S10E01	4	0	0			S10E01	Q	MINOR 08/09
						S12E10	1	0	0			S12E10	Q	RECURRENCE
						S15E45	0	0	0			S15E45	Q	
						S08E62	0	0	0			S08E62	Q	
099	09	08	089	106	023	S10W12	2	0	0		09	S10W12	Q	SOLQUIET
						S12W02	1	0	0			S12W02	Q	MAGALERT
						S15E31	8	0	0			S15E31	Q	MINOR 09
						S08E48	0	0	0			S08E48	Q	RECURRENCE
100	10	09	090	106	014	S10W27	1	0	0		10	S10W27	Q	SOLQUIET
						S12W16	1	0	0			S12W16	Q	MAGNIL
						S16E18	5	0	0			S16E18	Q	
						S08E34	1	0	0			S08E34	Q	

ALERT PERIODS
INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE
SUMMARY OF THE GEOALERT MESSAGES APRIL 1983

NO	DI	DO	WOLF	10CM	A	LOC	TOT	M	X	OUTSTANDING EVENTS	DA	LOC	DE	ALERTS
101	11	10	100	103	020	S09W41	2	0	0		11	S09W41	Q	SOLQUIET
						S12W31	0	0	0			S12W31	Q	MAGQUIET
						S17E04	0	0	0			S17E04	Q	
						S09E21	1	0	0			S09E21	Q	
						S06E74	0	0	0			S06E74	Q	
102	12	11	085	104	011	S09W55	3	0	0		12	S09W55	Q	SOLQUIET
						S16W09	1	0	0			S16W09	Q	MAGQUIET
						S09E08	1	0	0			S09E08	Q	
						S13E09	0	0	0			S13E09	Q	
						S09E61	0	0	0			S09E61	Q	
103	13	12	089	107	013	S09W66	0	0	0		13	S09W66	Q	SOLQUIET
						S16W22	0	0	0			S16W22	Q	MAGQUIET
						S08W06	0	0	0			S08W06	Q	
						S12W04	0	0	0			S12W04	Q	
						S08E49	1	0	0			S08E49	Q	
						N21E63	0	0	0			N21E63	Q	
104	14	13	109	108	027	S09W79	3	0	0		14	S09W79	Q	SOLQUIET
						S16W36	0	0	0			S16W36	Q	MAGQUIET
						S08W21	0	0	0			S08W21	Q	
						S13W17	0	0	0			S13W17	Q	
						S08E34	4	0	0			S08E34	Q	
						N22E54	1	0	0			N22E54	Q	
105	15	14	112	111	027	S10W92	0	0	0		15	S10W92	Q	SOLQUIET
						S17W49	0	0	0			S17W49	Q	MAGALERT
						S08W34	0	0	0			S08W34	Q	MINOR
						S13W30	0	0	0			S13W30	Q	15/16
						S08E19	7	0	0			S08E19	Q	
						S08E26	0	0	0			S08E26	Q	
						N21E41	0	0	0			N21E41	Q	
						N07E77	3	0	0			N07E77	Q	
106	16	15	125	103	033	S16W64	1	0	0		16	S16W64	Q	SOLQUIET
						S08W47	0	0	0			S08W47	Q	MAGALERT 16
						S28W14	0	0	0			S28W14	Q	
						S08E04	0	0	0			S08E04	Q	
						S08E12	0	0	0			S08E12	Q	
						N20E28	1	0	0			N20E28	Q	
						S13W45	0	0	0			S13W45	Q	
						N13E57	0	0	0			N13E57	Q	
						N05E65	5	0	0			N05E65	E	
107	17	16	123	104	024	S15W77	0	0	0		17	S15W77	Q	SOLQUIET
						S08W60	0	0	0			S08W60	Q	MAGNIL
						S29W28	0	0	0			S29W28	Q	
						S08W08	0	0	0			S08W08	Q	
						S08W02	0	0	0			S08W02	Q	
						S09E10	0	0	0			S09E10	Q	
						N18E14	0	0	0			N18E14	Q	
						N13E44	0	0	0			N13E44	Q	
						N08E52	2	0	0			N08E52	Q	
108	18	17	125	113	017	S16W91	0	0	0	PRESTO SOFLARE CULGOORA SURGE	18	S16W91	Q	SOLALERT
						S29W41	0	0	0	S11E90 WEAK TYPE II AND IV.		S29W41	E	MAGQUIET
						S07W22	0	0	0	SWF SYDNEY. XRAY M6 MAX AT		S07W22	Q	
						S07W16	0	0	0	18/0146Z.		S07W16	Q	
						S11W03	1	0	0			S11W03	Q	
						N23E01	1	0	0			N23E01	Q	
						N08E39	1	0	0			N08E39	Q	
						S11E90	1	1	0			S11E90	A	
109	19	18	110	120	011	S29W53	2	0	0		19	S29W53	Q	SOLNIL
						S07W28	0	0	0			S07W28	Q	MAGQUIET
						S11W14	0	0	0			S11W14	Q	
						N08E26	0	0	0			N08E26	Q	
						N11E43	0	0	0			N11E43	Q	

ALERT PERIODS
INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE
SUMMARY OF THE GEOALERT MESSAGES APRIL 1983

NO	DI	DO	WOLF	10CM	A	LOC	TOT	M	X	OUTSTANDING EVENTS	DA	LOC	DE	ALERTS
						S23E51	2	0	0			S23E51	Q	
						S10E83	1	1	0			S10E83	E	
110	20	19	125	124	009	S32W65	14	0	0		20	S32W65	E	SOLQUIET
						S07W42	0	0	0			S07W42	Q	MAGQUIET
						S11W30	0	0	0			S11W30	Q	
						S09W11	0	0	0			S09W11	Q	
						N08E09	0	0	0			N08E09	Q	
						N11E28	1	0	0			N11E28	Q	
						S22E38	0	0	0			S22E38	Q	
						S11E68	1	0	0			S11E68	E	
111	21	20	123	126	010	S30W79	1	0	0		21	S30W79	E	SOLQUIET
						S07W56	0	0	0			S07W56	Q	MAGQUIET
						S09W45	1	0	0			S09W45	Q	
						S09W24	0	0	0			S09W24	Q	
						N07W07	0	0	0			N07W07	Q	
						N11E13	0	0	0			N11E13	Q	
						S22E25	1	0	0			S22E25	Q	
						S12E56	4	0	0			S12E56	E	
112	22	21	122	132	010	S30W91	0	0	0	PRESTO TENFLARE 130 FLUX UNITS	22	S30W91	E	SOLQUIET
						S07W68	0	0	0	22/0003Z DURATION 10 MINUTES		S07W68	Q	MAGQUIET
						S10W59	0	0	0			S10W59	Q	
						N07W19	2	0	0			N07W19	Q	
						N11W01	0	0	0			N11W01	Q	
						S23E13	0	0	0			S23E13	Q	
						S12E43	1	0	0			S12E43	E	
						S11E81	5	0	0			S11E81	Q	
113	23	22	106	138	018	S10W71	0	0	0		23	S10W71	Q	SOLQUIET
						N08W35	0	0	0			N08W35	Q	MAGQUIET
						N11W17	0	0	0			N11W17	Q	
						S23W02	1	0	0			S23W02	Q	
						S11E28	2	0	0			S11E28	Q	
						N18E52	0	0	0			N18E52	Q	
						S13E70	0	0	0			S13E70	Q	
114	24	23	132	139	016	N08W48	0	0	0		24	N08W48	Q	SOLQUIET
						N11W30	0	0	0			N11W30	Q	MAGALERT
						S23W14	0	0	0			S23W14	Q	MINOR 24/25
						S12E17	2	0	0			S12E17	Q	RECURRENCE
						N18E39	0	0	0			N18E39	Q	
						S13E56	2	0	0			S13E56	E	
						S08E62	0	0	0			S08E62	Q	
						S15E65	0	0	0			S15E65	Q	
115	25	24	169	141	033	S09W74	0	0	0		25	S09W74	Q	SOLQUIET
						N08W62	2	0	0			N08W62	Q	MAGALERT 25
						N13W43	0	0	0			N13W43	Q	
						S23W29	0	0	0			S23W29	Q	
						S12E05	3	0	0			S12E05	E	
						N10E06	0	0	0			N10E06	Q	
						N20E27	0	0	0			N20E27	Q	
						S13E43	2	0	0			S13E43	Q	
						N14E44	0	0	0			N14E44	Q	
						S15E52	12	0	0			S15E52	E	
						S03E72	1	0	0			S03E72	Q	
116	26	25	195	144	022	N08W75	0	0	0		26	N08W75	Q	SOLQUIET
						N11W58	1	0	0			N11W58	Q	MAGALERT 26
						S23W43	0	0	0			S23W43	Q	
						S12W10	2	0	0			S12W10	Q	
						N09W06	0	0	0			N09W06	Q	
						N20E13	0	0	0			N20E13	Q	
						S13E29	1	0	0			S13E29	E	
						N14E31	0	0	0			N14E31	Q	
						N19E33	0	0	0			N19E33	Q	
						S16E40	11	0	0			S16E40	E	

ALERT PERIODS
INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE
SUMMARY OF THE GEOALERT MESSAGES APRIL 1983

NO	DI	DO	WOLF	10CM	A	LOC	TOT	M	X	OUTSTANDING EVENTS	DA	LOC	DE	ALERTS
						S04E58	1	0	0			S04E58	E	
117	27	26	144	145	025	N11W73	1	0	0		27	N11W73	Q	SOLQUIET
						S12W24	6	0	0			S12W24	E	MAGALERT
						S12E15	0	0	0			S12E15	Q	27/28
						N14E18	0	0	0			N14E18	Q	
						N18E19	0	0	0			N18E19	Q	
						S17E25	8	0	0			S17E25	E	
						S04E44	3	0	0			S04E44	E	
						S14E55	1	0	0			S14E55	Q	
118	28	27	166	148	017	N11W89	0	0	0		28	N11W89	Q	SOLQUIET
						S11W38	3	0	0			S11W38	E	MAGNIL
						N13E04	0	0	0			N13E04	Q	
						N17E06	1	0	0			N17E06	Q	
						S13E08	6	2	0			S13E08	A	
						S15E23	8	0	0			S15E23	E	
						S05E31	2	0	0			S05E31	E	
						S14E39	0	0	0			S14E39	Q	
119	29	28	171	157	012	S11W51	0	0	0	PRESTO TENFLARE 360 FLUX UNITS	29	S11W51	Q	SOLQUIET
						N14W10	2	0	0	28/1048Z DURATION 5 MINUTES		N14W10	Q	MAGQUIET
						N18W09	1	0	0			N18W09	Q	
						S14W05	4	0	0			S14W05	E	
						S15E09	2	0	0			S15E09	E	
						S04E15	2	1	0			S04E15	E	
						S15E17	0	0	0			S15E17	Q	
						S08E65	0	0	0			S08E65	Q	
120	30	29	177	146	026	S11W64	0	0	0		30	S11W64	Q	SOLQUIET
						N19W23	0	0	0			N19W23	Q	MAGQUIET
						N14W22	0	0	0			N14W22	Q	
						S14W17	2	0	0			S14W17	E	
						S15W04	0	0	0			S15W04	E	
						S03E01	1	0	0			S03E01	Q	
						S16E04	0	0	0			S16E04	Q	
						S08E52	0	0	0			S08E52	Q	
						S09E69	1	0	0			S09E69	E	
121	01	30	131	145	024	S11W78	0	0	0	PRESTO TENFLARE 150 FLUX UNITS	01	S11W78	Q	SOLQUIET
						N19W36	0	0	0	30/0800Z DURATION 40 MINUTES		N19W36	Q	MAGQUIET
						N14W35	0	0	0			N14W35	Q	
						S14W30	2	1	0			S14W30	E	
						S15W17	1	0	0			S15W17	E	
						S03W14	0	0	0			S03W14	Q	
						S08E38	0	0	0			S08E38	Q	
						S09E56	4	0	0			S09E56	E	

NO=MESSAGE SERIAL NUMBER,DI=DATE OF ISSUE,DO=DATE OF OBSERVATION,WOLF=WOLF NUMBER,10CM=10CM SOLAR FLUX,A=A INDEX,LOC=LOCATION LAT-LONG,TOT=TOTAL,M=NUMBER OF M FLARE,X=NUMBER OF X FLARES,DA=DATE OF FORECAST,DE=DESCRIPTION,Q=QUIET,E=ERUPTIVE,A=ACTIVE,P=PROTON.

ALERT PERIODS
INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE
APRIL 1983

PRESTO MESSAGES (THE RAPID REPORT OF MAJOR EVENTS)

04 APRIL 1983 BOULDER 04/1741Z TENFLARE 110 FLUX UNITS 04/1642Z DURATION 2 MINUTES
18 APRIL 1983 SYDNEY 18/0218Z SOFLARE CULGOORA SURGE S11E90 WEAK TYPE II AND TYPE IV. SWF SYDNEY. X-RAY M6 MAXIMUM AT 18/0146Z
22 APRIL 1983 TOYOKAWA 22/0020Z TENFLARE 130 FLUX UNITS 22/0003Z DURATION 10 MINUTES
28 APRIL 1983 BOULDER 28/1115Z TENFLARE 360 FLUX UNITS 28/1048Z DURATION 5 MINUTES
01 MAY 1983 TOYOKAWA 01/0015Z TENFLARE 150 FLUX UNITS 30/0800Z DURATION 40 MINUTES

INTERNATIONAL* (R_I) RELATIVE SUNSPOT NUMBERS

Day	1982 Final May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	1983 Prov Jan	Feb	Mar	Apr
01	63	70	50	55	115	132	80	88	68	94	109	56
02	57	83	41	68	124	164	88	125	77	85	93	70
03	46	94	33	68	146	143	75	132	55	88	86	62
04	58	104	42	81	176	120	100	137	63	94	93	53
05	63	111	39	97	160	109	100	137	82	82	108	36
06	64	108	32	128	141	55	76	174	110	71	82	49
07	69	115	33	144	117	54	98	175	109	72	77	61
08	89	127	42	150	115	55	86	184	126	63	68	55
09	47	142	61	161	94	54	102	152	100	39	74	59
10	53	147	110	155	81	88	109	166	83	23	55	64
11	58	138	146	157	86	87	112	171	90	21	49	69
12	75	144	187	138	78	92	83	194	77	18	32	61
13	78	139	219	113	81	98	98	172	94	11	12	64
14	58	137	222	100	104	88	116	160	92	10	24	64
15	52	125	246	100	129	71	116	166	92	26	44	53
16	69	128	163	86	133	65	100	140	89	17	63	63
17	76	136	272	93	127	54	108	118	102	22	74	63
18	89	134	270	105	107	33	117	102	86	32	83	75
19	110	134	234	97	117	56	122	79	93	33	82	103
20	112	139	192	77	104	70	118	63	81	32	82	90
21	98	143	138	79	102	95	131	87	74	39	83	87
22	121	146	99	90	95	100	141	88	73	29	70	83
23	107	116	74	71	97	128	120	96	64	40	63	97
24	110	112	27	79	109	145	96	100	58	44	60	104
25	88	92	25	101	118	142	75	122	75	61	48	118
26	117	94	29	98	138	135	73	116	77	70	70	106
27	130	49	22	115	133	131	71	126	70	88	72	131
28	119	36	19	132	132	103	74	120	89	98	48	136
29	112	32	23	134	144	101	82	98	99		50	122
30	77	38	38	144	160	96	76	79	101		72	137
31	82		60	120		73		69	110		37	
Mean	82	110	106	108	119	95	98	127	86	50	66	80

DAILY SOLAR FLUX AT 2800 MHz (10.7 CM) ADJUSTED TO 1 AU

ALGONQUIN RADIO OBSERVATORY, OTTAWA

Day	May 82	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan 83	Feb	Mar	Apr
01	151.7	134.2	106.5	123.4	184.3*	205.2	159.6	167.8	131.4	162.6	145.4	100.7
02	147.4	135.1	106.9	138.2*	168.7*	209.4	154.5	166.3	131.4	156.5*	138.7	101.2
03	147.7	141.5	109.4	153.5*	171.0*	197.0	147.4	181.6	136.2	145.5	141.0	101.4*
04	144.7	158.2*	111.5	167.3	188.1*	182.3	143.4	194.5	138.2	156.8	143.7	100.8
05	148.7	156.6*	114.1	180.9	179.4	163.9	136.4	195.9*	154.6	154.3*	146.6	98.7
06	153.0	149.6*	121.3	201.2	172.1	151.9	142.1	210.4	161.6*	152.3	139.3	99.5
07	151.0	158.6*	128.2*	219.6	176.8	140.2	142.3	244.3	163.3	142.2	132.3	102.2
08	150.8	167.3	150.3*	217.5*	178.5	136.9	144.8	241.7*	155.9*	133.3	128.1	104.1*
09	139.8	177.4	176.6*	212.5	179.2	137.4	147.5	258.6	150.0	121.9	122.0	106.1
10	130.7	196.0*	203.5*	209.5	165.6	134.8	152.9	273.5*	144.2	113.4	115.1	103.3
11	132.3	224.2	226.4*	205.0*	158.3	137.3	154.1	259.3*	139.3	106.9	103.0	104.4
12	132.3	238.3*	239.7*	195.2*	152.5*	136.4	164.9	251.1	135.7	99.8	99.5*	107.7
13	129.8	240.2	252.6*	182.9*	151.3	143.9	161.2	239.0	135.1	95.5	95.8	109.1
14	132.2	240.8	269.2*	176.8	147.4	140.4	159.5	235.6	137.2	91.7	95.9	111.7
15	132.1	235.8	274.0	173.0	149.0*	134.1	157.0*	221.9	141.0	88.5	100.6*	103.6
16	139.0	210.6*	269.4*	161.4	147.3	129.8	163.3	213.2*	140.2	89.7	107.8	105.1
17	142.2*	206.0*	273.3	165.1	147.0*	130.1	158.0	200.5*	138.0	91.9	114.5	113.5
18	146.8	200.7*	247.2*	166.4*	143.2	132.8	170.2*	186.5	134.8	97.2	117.7	120.7
19	155.9	207.5	234.7	159.2	142.6*	136.7	182.3	176.8*	127.4	94.6	118.3	125.0
20	155.6*	207.1	196.3	144.7	146.9	146.2	189.2	159.2	120.5	97.3	120.7	127.4
21	165.4*	210.7	173.7*	138.6	145.4	161.4	200.9	149.4	116.1	101.6	118.8*	133.3
22	158.8	197.2*	149.5*	138.8	146.2	168.2	231.1*	150.1*	113.5	106.2	117.2	139.7
23	155.7*	187.3	128.5	141.2	152.6*	177.3	196.1	157.0*	115.4	112.0	116.2	140.4
24	144.8*	168.2	117.8	142.9	165.4*	190.9	172.9	166.8	114.1	114.3	117.1	142.7
25	145.7	159.1*	108.2	158.5	170.3	196.8	164.8	170.6	122.7	120.3	114.2*	145.6
26	158.0	142.3	102.1	166.4	187.3	193.5	168.8*	168.7	132.6	126.2	114.7*	146.8
27	171.5*	127.6	97.8	180.4	191.4	187.7	158.6	166.2	133.6	138.3	109.6	149.6
28	171.3*	123.1	96.4	181.4	196.9	181.4	160.3*	157.0	140.6	137.6	104.9	156.4*
29	170.9*	111.7	97.5	183.4	204.6	170.9	161.4	147.3	148.9		98.9	148.4
30	142.8	108.5	112.4	174.5	202.4	166.7	164.8	142.5	154.8		100.7	147.2
31	136.7		114.4	175.0*		165.1		134.4	161.9		98.7	
Mean	147.9	177.4	164.8	172.1	167.1	160.9	163.7	93.2	137.7	119.6	117.3	119.9

*Adjusted for burst in progress at time of measurement.

DAILY SOLAR INDICES

APRIL 1983

Day	Julian Day	Bartels Cycle Day	Sunspot Numbers R_I	Sunspot Numbers R_A	Obs Flux Ottawa (2800)	Solar Flux Adjusted to 1 Astronomical Unit: AFGL (15400)	AFGL (8800)	AFGL (4995)	Ottawa (2800)	AFGL (2695)	AFGL (1415)	AFGL (606)	AFGL (410)	AFGL (245)
01	91	17	56	54	100.8	558	261	127	100.7	94	91	81	30	13
02	92	18	70	59	101.3	560	245	127	101.2	95	87	74	30	12
03	93	19	62	50	101.4*	533	246	129	101.4*	89	92	71	30	13
04	94	20	53	46	100.7	540	246	129	100.8	91	86	73	29	14
05	95	21	36	41	98.6	559	240	127	98.7	92	83	65	27	14
06	96	22	49	50	99.3	562	249	127	99.5	84	83	65	26	15
07	97	23	61	64	102.0	560	253	131	102.2	92	84	67	28	15
08	98	24	55	61	103.8*	492	257	134	104.1*	103	87	72	28	16
09	99	25	59	56	105.8	556	258	133	106.1	101	86	65	26	14
10	100	26	64	64	102.9	---	---	---	103.3	---	---	---	--	--
11	101	27	69	66	103.9	433	247	128	104.4	105	89	16	9	9
12	102	1	61	68	107.2	539	244	132	107.7	108	93	73	28	15
13	103	2	64	71	108.4	562	249	128	109.1	104	91	72	28	14
14	104	3	64	54	111.0	---	---	---	111.7	---	---	---	--	--
15	105	4	53	48	102.9	---	---	---	103.6	---	---	---	--	--
16	106	5	63	56	104.4	---	---	---	105.1	---	---	---	--	--
17	107	6	63	64	112.6	---	---	---	113.5	---	---	---	--	--
18	108	7	75	80	119.6	---	---	---	120.7	---	---	---	--	--
19	109	8	103	91	123.9	---	---	---	125.0	---	---	---	--	--
20	110	9	90	83	126.1	573	286	154	127.4	115	110	92	39	21
21	111	10	87	72	132.0	578	267	156	133.3	133	117	74	36	19
22	112	11	83	77	138.2	583	277	163	139.7	122	118	89	38	19
23	113	12	97	74	138.9	542	239	157	140.4	132	121	76	33	18
24	114	13	104	83	141.0	520	257	156	142.7	135	118	83	35	31
25	115	14	118	100	143.9	539	287	169	145.6	131	120	92	36	19
26	116	15	106	97	144.9	581	280	170	146.8	144	124	91	35	28
27	117	16	131	119	147.5	586	281	164	149.6	139	127	97	39	18
28	118	17	136	141	154.2*	589	276	173	156.4*	149	134	88	34	17
29	119	18	122	129	146.2	---	---	---	148.4	---	---	---	--	--
30	120	19	137	121	145.0	569	275	162	147.2	131	128	81	30	17
Mean			80	75	118.9	551	260	144	119.9	113	103	75	30	17

*Adjusted for burst in progress at time of measurement.

Numbers in parentheses in the column headings denote frequencies in MHz.
Equipment problems produced the gaps shown here in the AFGL Sagamore Hill observations.
The international and American sunspot numbers represent provisional values.

OBSERVED AND PREDICTED SOLAR ACTIVITY INDICES
April 1983

Date	RELATIVE SUNSPOT NUMBERS: Zurich or International (R_I) Monthly Mean	Zurich or International (R_I) Smoothed	American (R_A) Monthly Mean	American (R_A) Smoothed	Derived (R_S) Monthly Mean	Derived (R_S) Smoothed	2800 MHz RADIO FLUX Adjusted to 1 AU (S_a) Monthly Mean	2800 MHz RADIO FLUX Adjusted to 1 AU (S_a) Smoothed
Feb 79	137.5	131	136.8	123	153.0	124	199.1	172
Mar	138.0	136	132.5	128	136.7	128	184.0	176
Apr	101.5	141	95.8	133	127.0	133	175.0	180
May	134.4	147	121.8	139	120.4	139	168.9	186
Jun	149.5	153	136.4	144	138.9	144	186.0	191
Jul	159.4	155	140.5	145	123.1	145	171.4	192
Aug	142.2	155	125.1	144	129.2	145	177.0	192
Sep	188.4	156	184.0	143	156.5	144	202.3	191
Oct	186.2	158	178.2	144	171.7	145	216.4	192
Nov	183.3	162	176.5	149	182.9	149	226.8	196
Dec	176.3	164	157.6	152	151.0	152	197.2	199
Jan 80	159.6	164	145.3	153	153.6	154	199.6	200
Feb	155.0	163	133.9	154	148.7	155	195.1	200
Mar	126.2	161	107.9	153	117.8	153	166.5	200
Apr	164.1	159	138.5	151	164.0	152	209.3	198
May	179.7	156	172.3	149	185.4	151	229.1	197
Jun	157.3	155	153.6	149	153.2	151	199.3	198
Jul	136.3	153	136.0	144	144.1	151	190.8	197
Aug	135.4	150	133.0	144	121.9	150	170.3	196
Sep	155.0	150	150.0	146	138.8	152	185.9	198
Oct	164.7	150	160.8	149	157.1	154	202.9	200
Nov	147.9	148	149.9	149	168.5	153	213.4	199
Dec	174.4	143	167.5	145	174.3	150	218.8	196
Jan 81	114.0	140	115.4	144	120.5	149	169.0	195
Feb	141.3	142	143.7	146	153.5	152	199.5	198
Mar	135.5	143	149.2	149	157.5	156	203.2	202
Apr	156.4	143	169.2	149	180.7	158	224.7	204
May	127.5	143	141.3	149	152.8	159	198.9	204
Jun	90.9	142	99.0	147	112.9	158	161.9	203
Jul	143.8	140	154.3	146	152.1	157	198.2	203
Aug	158.7	141	170.4	147	182.1	158	226.0	203
Sep	167.3	143	174.5	148	177.7	158	221.9	204
Oct	162.4	142	157.0	146	178.6	156	222.8	202
Nov	137.5	139	138.8	142	157.6	151	203.3	197
Dec	150.1	138	145.0	140	155.5	149	201.4	195
Jan 82	111.1	137	110.4	139	124.2	148	173.4	195
Feb	163.6	133	161.0	134	163.6	144	208.9	191
Mar	153.8	129	155.5	130	163.0	139	208.3	186
Apr	122.0	124	121.9	124	113.9	134	162.9	182
May	82.2	120	82.6	120	97.7	129	147.9	177
Jun	110.4	117	113.5	118	129.6	127	177.4	175
Jul	106.1	115*	113.3	117	116.0	125	164.8	174
Aug	107.6	109*	110.5	111	123.9	120	172.1	168
Sep	118.8	101*	117.8	103	118.5	112	167.1	161
Oct	94.7	96*	90.1	96	111.8	106	160.9	155
Nov	98.1	**91(3)***	93.2	**92**	114.8	**101**	163.7	---
Dec	127.0	**88(6)***	145.0	**88**	146.7	**97**	193.2	---
Jan 83	85.8†	**83(7)***	82.8	**83**	86.7	**91**	137.7	---
Feb	50.1†	**80(9)***	53.4	**80**	67.2	**88**	119.6	---
Mar	66.5†	**78(10)***	60.5	**79**	64.7	**86**	117.3	---
Apr	79.7†	**76(13)***	---	**76**	67.5	**83**	119.9	---
May	---	**73(15)***	---	**73**	---	**80**	---	---
Jun	---	**70(17)***	---	**70**	---	**76**	---	---
Jul	---	**68(19)***	---	**69**	---	**74**	---	---
Aug	---	**67(21)***	---	**68**	---	**73**	---	---
Sep	---	**66(23)***	---	**67**	---	**72**	---	---
Oct	---	**66(24)***	---	**67**	---	**73**	---	---

*An asterisk marks either a value of the observed 12-month running mean or of a predicted 12-month average that is based in part on preliminary observations.

Boldface entries indicate predicted values and parentheses enclose the absolute value of the 90% confidence limits. All tabulated entries of the American sunspot number are final values. The two columns headed "Derived" represent a sunspot number computed from a linear regression equation between the 2800 MHz solar flux (adjusted to 1 astronomical unit) and the Zurich sunspot number.

†International numbers replaced the Zurich values in January 1981.

SMOOTHED OBSERVED AND PREDICTED SUNSPOT NUMBERS FOR CYCLE 21

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1976	15	13	12	13	13	12	13	14	14	13	14	15
1977	17	18	20	22	24	26	29	33	39	46	52	57
1978	61	65	70	77	83	89	97	104	108	111	113	118
1979	124	131	137	141	147	153	155	155	156	158	162	165*
1980	164	163	161	159	156	155	153	150	150	150	148	143
1981	140	142	143	143	143	142	140	141	143	142	139	138
1982	137	133	129	124	119	117	115	109	101	95	90	86
										(2)	(5)	(7)
1983	82	79	77	75	72	69	68	67	66	66	66	65
	(8)	(9)	(11)	(13)	(15)	(17)	(18)	(20)	(22)	(23)	(23)	(24)
1984	63	61	57	53	51	51	49	47	45	43	41	39
	(24)	(25)	(25)	(26)	(28)	(29)	(29)	(29)	(29)	(28)	(27)	(27)
1985	38	37	36	36	35	33	32	31	30	30	29	28
	(27)	(26)	(25)	(25)	(25)	(24)	(22)	(21)	(21)	(22)	(23)	(23)
1986	28	27	25	24	22	20	18	16	16	15	15	15
	(23)	(23)	(23)	(22)	(22)	(21)	(20)	(19)	(18)	(17)	(15)	(14)

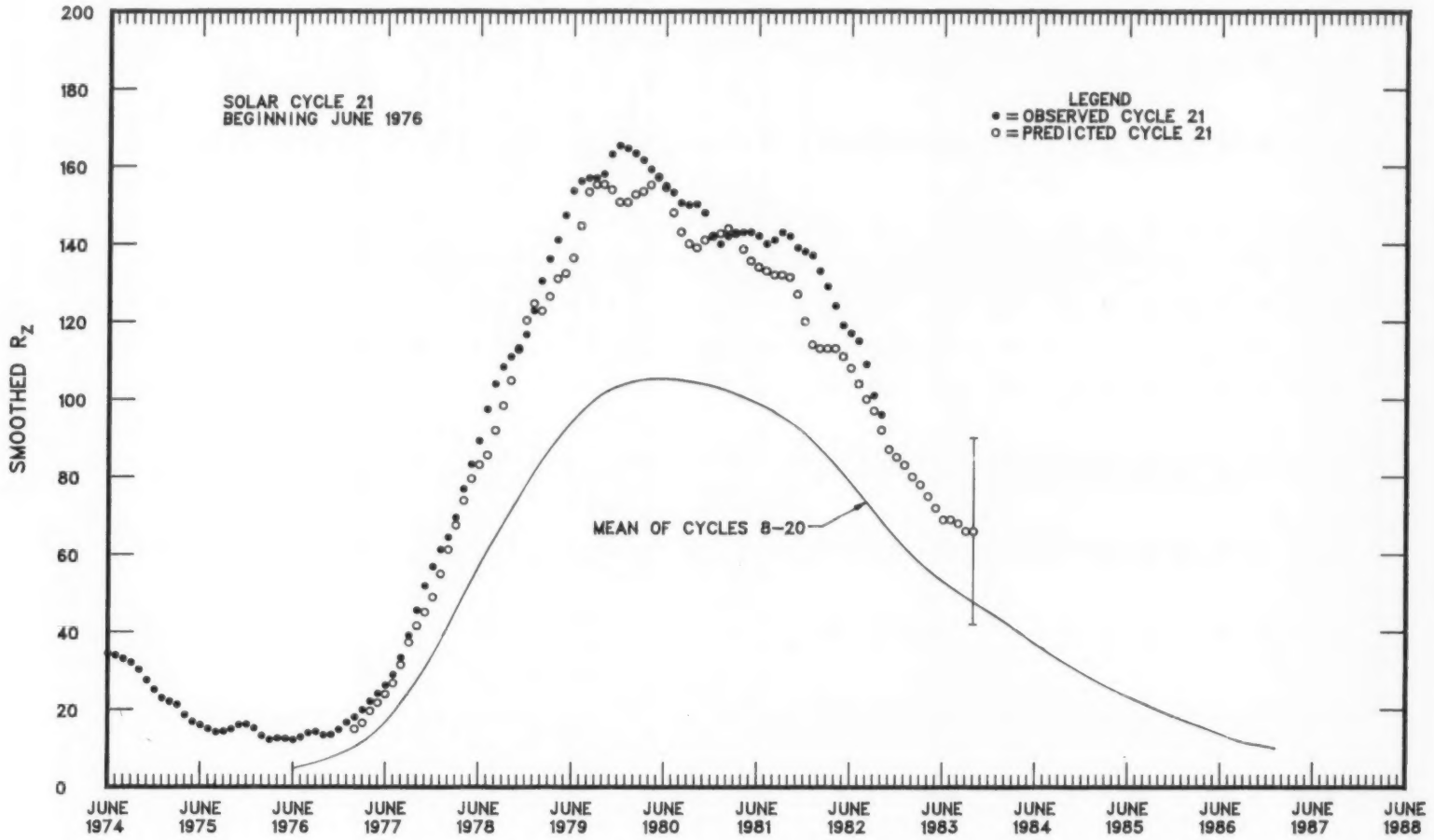
For the current solar cycle, this table gives observed smoothed sunspot numbers up to the one calculated from the most recently measured monthly mean. These smoothed observed values are based on final monthly mean Zurich numbers through 1980, on final international numbers through 1982, and on provisional international numbers thereafter. Some table entries after the June 1976 value will change slightly, when we incorporate final data for 1983.

The entries with numbers in parentheses below them denote predictions by the McNish-Lincoln method. (See page 10 in the February 1983 edition of the "Solar-Geophysical Data" supplement.) By adding to and subtracting from each prediction the number in parentheses, one generates the 90% confidence interval. Consider, for example, the October 1983 prediction tabulated above. There exists a 90% chance that in October 1983 the actual smoothed sunspot number will fall somewhere between 42 and 90.

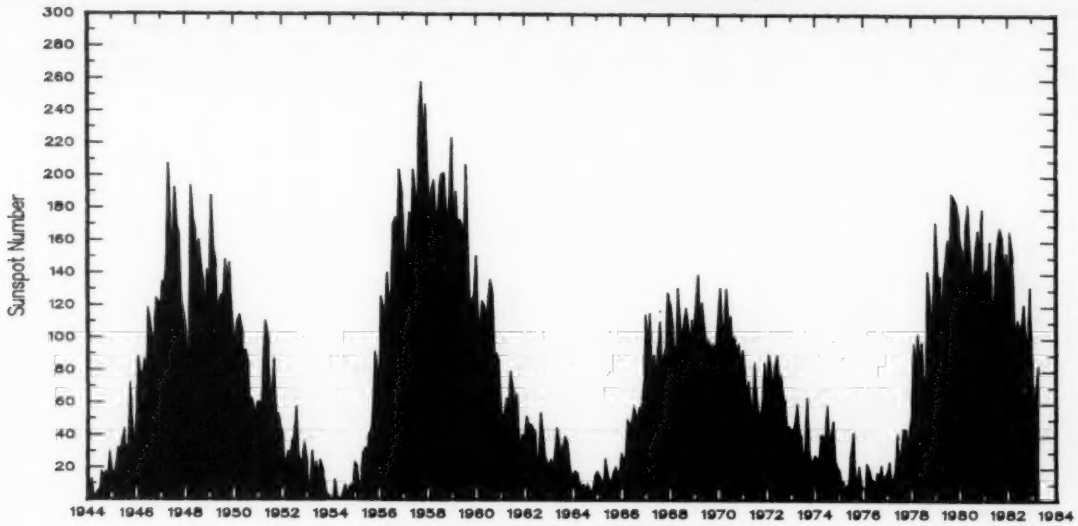
THE MCNISH-LINCOLN PREDICTION METHOD GENERATES USEFUL ESTIMATES OF SMOOTHED SUNSPOT NUMBERS FOR NO MORE THAN 12 MONTHS AHEAD. Beyond a year the predictions regress rapidly toward the mean of all 13 cycles of data used in the computation. Furthermore, the method is very sensitive to the date defined as the beginning of the current sunspot cycle, that is, to the date of the most recent sunspot minimum. In "Solar-Geophysical Data," issues 390-401, we based the current cycle predictions on March 1976 as the end of cycle 20 and the onset of the new cycle 21. Later studies, including one published by M. Waldmeier, showed that June 1976 was more appropriately the minimum epoch. We therefore generated this table using the June 1976 date.

*MAXIMUM OF SUNSPOT CYCLE 21. The maximum smoothed sunspot number occurred in December 1979.

OBSERVED AND ONE-YEAR-AHEAD PREDICTED SMOOTHED SUNSPOT NUMBERS



MONTHLY MEAN SUNSPOT NUMBERS
January 1944 – April 1983



MONTHLY MEAN SUNSPOT NUMBERS

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1944	3.7	0.5	11.0	0.3	2.5	5.0	5.0	16.7	14.3	16.9	10.8	28.4
1945	18.5	12.7	21.5	32.0	30.6	36.2	42.6	25.9	34.9	68.8	46.0	27.4
1946	47.6	86.2	76.6	75.7	84.9	73.5	116.2	107.2	94.4	102.3	123.8	121.7
1947	115.7	133.4	129.8	149.8	201.3	163.9	157.9	188.8	169.4	163.6	128.0	116.5
1948	108.5	86.1	94.8	189.7	174.0	167.8	142.2	157.9	143.3	136.3	95.8	138.0
1949	119.1	182.3	157.5	147.0	106.2	121.7	125.8	123.8	145.3	131.6	143.5	117.6
1950	101.6	94.8	109.7	113.4	106.2	83.6	91.0	85.2	51.3	61.4	54.8	54.1
1951	59.9	59.9	55.9	92.9	108.5	100.6	61.5	61.0	83.1	51.6	52.4	45.8
1952	40.7	22.7	22.0	29.1	23.4	36.4	39.3	54.9	28.2	23.8	22.1	34.3
1953	26.5	3.9	10.0	27.8	12.5	21.8	8.6	23.5	19.3	8.2	1.6	2.5
1954	0.2	0.5	10.9	1.8	0.8	0.2	4.8	8.4	1.5	7.0	9.2	7.6
1955	23.1	20.8	4.9	11.3	28.9	31.7	26.7	40.7	42.7	58.5	89.2	76.9
1956	73.6	124.0	118.4	110.7	136.6	116.6	129.1	169.6	173.2	155.3	201.3	192.1
1957	165.0	130.2	157.4	175.2	164.6	200.7	187.2	158.0	235.8	253.8	210.9	239.4
1958	202.5	164.9	190.7	196.0	175.3	171.5	191.4	200.2	201.2	181.5	152.3	187.6
1959	217.4	143.1	185.7	163.3	172.0	168.7	140.6	199.6	145.2	111.4	124.0	125.0
1960	146.3	106.0	102.2	122.0	119.6	110.2	121.7	134.1	127.2	82.8	89.6	85.6
1961	57.9	46.1	53.0	61.4	51.0	77.4	70.2	55.9	63.6	37.7	32.6	40.0
1962	38.7	50.3	45.6	46.4	43.7	42.0	21.8	21.8	51.3	39.5	26.9	23.2
1963	19.8	24.4	17.1	29.3	43.0	35.9	19.6	33.2	38.8	35.3	23.4	14.9
1964	15.3	17.7	16.5	8.6	9.5	9.1	3.1	9.3	4.7	6.1	7.4	15.1
1965	17.5	14.2	11.7	6.8	24.1	15.9	11.9	8.9	16.8	20.1	15.8	17.0
1966	28.2	24.4	25.3	48.7	45.3	47.7	56.7	51.2	50.2	57.2	57.2	70.4
1967	110.9	93.6	111.8	69.5	86.5	67.3	91.5	107.2	76.8	88.2	94.3	126.4
1968	121.8	111.9	92.2	81.2	127.2	110.3	96.1	109.3	117.2	107.7	86.0	109.8
1969	104.4	120.5	135.8	106.8	120.0	106.0	96.8	98.0	91.3	95.7	93.5	97.9
1970	111.5	127.8	102.9	109.5	127.5	106.8	112.5	93.0	99.5	86.6	95.2	83.5
1971	91.3	79.0	60.7	71.8	57.5	49.8	81.0	61.4	50.2	51.7	63.2	82.2
1972	61.5	88.4	80.1	63.2	80.5	88.0	76.5	76.8	64.0	61.3	41.6	45.3
1973	43.4	42.0	46.0	57.7	42.4	39.5	23.1	25.6	59.3	30.7	23.9	23.3
1974	27.6	26.0	21.3	40.3	39.5	36.0	55.8	33.6	40.2	47.1	25.0	20.5
1975	18.9	11.5	11.5	5.1	9.0	11.4	28.2	39.7	13.9	9.1	19.4	7.8
1976	8.1	4.3	21.9	18.8	12.4	12.2	1.9	16.4	13.5	20.6	5.2	15.3
1977	16.4	23.1	8.7	12.9	18.6	38.5	21.4	30.1	44.0	43.8	29.1	43.2
1978	51.9	93.6	76.5	99.7	82.7	95.1	70.4	58.1	138.2	125.1	97.9	122.7
1979	166.6	137.5	138.0	101.5	134.4	149.5	159.4	142.2	188.4	186.2	183.3	176.3
1980	159.6	155.0	126.2	164.1	179.9	157.3	136.3	135.4	155.0	164.7	147.9	174.4
1981	114.0	141.3	135.5	156.4	127.5	90.9	143.8	158.7	167.3	162.4	137.5	150.1
1982	111.2	163.6	153.8	122.0	82.2	110.4	106.1	107.6	118.8	94.7	98.1	127.0
1983	85.8*	50.1*	66.5*	79.7*								

*Provisional

H - ALPHA SOLAR FLARES

APRIL 1983

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Imp See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
GOES	01	0001	0048	0250						169		C .4						
PURP	01	0343	0355U	0359D	S18	E04		04	1.5	16D	SF			C	0355	41	.4	
PEKG	01	0345	0354	0420D	S17	E02		04	1.3	35D	SF			P	0354	42	.4	E
LEAR	01	0345	0346	0413	S17	E03	4127	04	1.4	28	SF	C .5	3	C		37		
PALE	01	0345	0350	0354D	S17	E02	4127	04	1.3	9D	SF	C .5	3	C		27		
HOLL	01	1857	1900	1903	S06	W21	4131	03	31.2	6	SF		3	C		36		F
PALE	01	1858	1900	1905	S07	W22	4131	03	31.1	7	SF		3	C		30		F
HOLL	01	2243	2243	2300	S12	W24	4125	03	31.1	17	SF		3	C		26		
GOES	02	1221	1225	1228						7		C .4						
PALE	02	1725	1728	1742	S20	W11	4129	04	1.9	17	SF		3	C		32		
HOLL	02	1725	1730	1739	S20	W13	4129	04	1.7	14	SF		3	C		27		
HOLL	02	2126	2126	2131	S18	W17	4127	04	1.6	5	SF	C .4	3	C		38		
HOLL	02	2221	2221	2226	S11	E72	4135	04	8.4	5	SF		3	C		14		
GOES	03	0102	0105	0109						7		C .3						
GOES	03	0452	0456	0501						9		C .4						
GOES	03	0721	0727	0734						13		C .5						
RAMY	03	1306	1306	1313	S18	W25	4127	04	1.6	7	SB	C 2.6	3	C		72		
HOLL	03	1310E	1310U	1328	S19	W27	4127	04	1.5	18D	SF	C 2.6	1	C		45		
HOLL	03	1606	1608	1613	S13	E63	4135	04	8.4	7	SF		3	C		15		
HOLL	03	1658	1711	1804	S16	W31	4127	04	1.4	66	1N		3	C		209		K
HOLL	03	1658	1714	1804	S16	W31	4127	04	1.4	66	1N	C 3.5	3	C		209		K
RAMY	03	1702	1708	1708D	S17	W30	4127	04	1.4	6D	1N		3	C		200		
PALE	03	1705	1709	1811	S18	W30	4127	04	1.4	66	1N		3	C		194		UF
LEAR	04	0301	0301	0309	S17	W34	4127	04	1.5	8	SF		3	C		36		
GOES	04	0550	0604	0606						16		C 1.4						
LEAR	04	0643	0645	0651	S12	E56	4135	04	8.5	8	SN	C .6	3	C		31		
GOES	04	1031	1035	1039						8		C .9						
RAMY	04	1326	1328	1340	S20	W40	4127	04	1.5	14	SN	C 2.9	3	C		92		
RAMY	04	1537	1538	1600	S18	W42	4127	04	1.4	23	SN	C .4	3	C		29		F
RAMY	04	1643	1645	1752D	S19	W41	4127	04	1.6	69D	SB	C 3.7	3	C		115		
PALE	04	2003	2003	2016	S20	W44	4127	04	1.5	13	SN	C 1.3	3	C		65		F
LEAR	05	0035	0038	0052	S19	W46	4127	04	1.5	17	SN	C 1.0	3	C		41		
GOES	05	0119	0122	0124						5		C .5						
GOES	05	0214	0217	0219						5		C .4						
GOES	05	0222	0225	0227						5		C .7						
LEAR	05	0336	0338	0342	S16	E83		04	11.4	6	SF	C .4	3	C				
GOES	05	0359	0404	0410						11		C .7						
LEAR	05	0424	0428	0442	S19	W48	4127	04	1.5	18	SB	C 3.1	3	C		107		
PURP	05	0427E	0427	0433	S19	W49		04	1.4	6D	SN	C 3.1		C	0427	30	.5	
LEAR	05	0545	0546	0554	S16	E82		04	11.5	9	SF		3	C				
LEAR	05	0842	0844	0900	S19	W51	4127	04	1.5	18	SF	C .4	3	C		45		F
GOES	05	1149	1155	1204						15		C 1.1						
RAMY	05	1339	1340	1353	S20	W54	4127	04	1.4	14	SN	C .8	3	C		51		
PALE	05	1728	1730	1755	S18	W52	4127	04	1.8	27	SB	C 3.2	3	C		104		FE
PALE	05	1728	1730	1812	S21	W51	4129	04	1.8	44	SN		3	C		95		
GOES	05	1946	1952	2006						20		C .5						
LEAR	05	2341	2342	2356	S17	W59	4127	04	1.5	15	SF	C 1.3	3	C		22		
LEAR	06	0347	0351	0354	S13	E33	4135	04	8.6	7	SF		3	C		29		
LEAR	06	0458	0502	0512	S19	W62	4127	04	1.5	14	SN	C 1.4	3	C		59		
GOES	06	1323	1330	1338			4131			15		C .5						
RAMY	06	1439E	1439	1444	S13	E27	4135	04	8.6	5D	SF		3	C		35		F
LEAR	07	0119	0122	0136	S11	E15	4137	04	8.2	17	SF		3	C		57		
PALE	07	0119	0123	0133	S11	E15	4137	04	8.2	14	SF		3	C		54		
MANI	07	0122E	0123	0135	S11	E15		04	8.2	13D	SF		1	V		50	.5	
PURP	07	0144	0146	0205	S21	W71		04	1.6	21	1N			C	0146	90		E
LEAR	07	0144	0146	0210	S17	W69	4127	04	1.8	26	SN		3	C		80		F
PALE	07	0146	0147U	0204	S20	W67	4127	04	1.9	18	SN		3	C		51		F
MANI	07	0147	0149	0202D	S19	W67		04	2.0	15D	SN		1	V		45	.9	F
PURP	07	0150	0157U	0232	S11	E14		04	8.1	42	SB	C 2.5		C	0157	110	1.2	
LEAR	07	0150	0155	0249	S11	E13	4137	04	8.1	59	SN	C 2.5	3	C		141		F
PALE	07	0153E	0200U	0249	S11	E14	4137	04	8.1	56D	SN		3	C		164		UF
PEKG	07	0214	0229	0250	S11	E14		04	8.1	36	SN			P	0229	84	.9	FU
GOES	07	0438	0446	0450						12		C 1.5						

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Imp See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
PALE	07	1716	1729	1755	S10	E05	4137	04	8.1	39	SF		3	C		54		
PALE	08	0009	0012	0015	S17	E45	4138	04	11.4	6	SF		3	C		22		
PALE	08	0017	0020	0029	S10	E04	4137	04	8.3	12	SF	C .5	3	C		38		F
PALE	08	0044	0044	0104	S17	E44	4138	04	11.4	20	SF		3	C		25		K
PALE	08	0044	0053	0104	S17	E44	4138	04	11.4	20	SF		3	C		39		K
LEAR	08	0117	0124	0139	S17	E44	4138	04	11.4	22	SF		3	C		47		
PALE	08	0117	0127	0144D	S16	E42	4138	04	11.2	27D	SF		3	C		52		
MANI	08	0120E	0122	0143	S17	E45		04	11.5	23D	SF		1	V		35	.5	
GOES	08	0832	0834	0839						7		C .6						
GOES	08	0909	0932	0937						28		C .9						
KAND	08	1002	1014	1018	S17	E38		04	11.3	16	SF			C		21	.3	D
GOES	08	1003	1008	1018						15		C 1.1						
RAMY	08	1203	1203	1210	S11	W01	4137	04	8.4	7	SN		3	C		46		F
GOES	08	1207	1212	1224			4137			17		C 1.9						
KAND	08	1257	1313	1328	S17	E37		04	11.4	31	SB			C		37	.5	D
RAMY	08	1309	1313	1316	S16	E35	4138	04	11.2	7	SN		3	C		43		
RAMY	08	1607	1608	1648	S12	W01	4135	04	8.6	41	SF		3	C		81		
RAMY	08	1657	1702	1707	S15	E34	4138	04	11.3	10	SN	C 1.3	3	C		43		
PALE	08	1728	1728	1739	S15	E34	4138	04	11.3	11	SF		4	C		29		
PALE	08	1751	1756	1801	S15	E33	4138	04	11.2	10	SF		4	C		35		
RAMY	08	1803	1812	1817	S15	E33	4138	04	11.3	14	SN	C .6	3	C		68		
PALE	08	1809	1812	1817	S15	E33	4138	04	11.3	8	SF	C .6	4	C		63		
GOES	08	1902	1905	1909						7		C .6						
GOES	08	2052	2055	2058						6		C .6						
GOES	08	2147	2156	2201						14		C 1.2						
GOES	08	2258	2302	2304						6		C .8						
GOES	08	2320	2341	2349						29		C 2.1						
PALE	09	0256	0300	0305	S11	W16	4137	04	7.9	9	SF		3	C		26		
LEAR	09	0258	0300	0303	S18	E29	4138	04	11.3	5	SF		3	C		46		
GOES	09	0354	0357	0403						9		C .8						
GOES	09	0415	0419	0423						8		C 1.0						
PEKG	09	0458	0506	0510	S11	W09		04	8.5	12	SN	C 2.3		C	0506	101	1.0	E
LEAR	09	0502E	0503	0518	S12	W08	4135	04	8.6	16D	SN	C 2.3	2	C		157		H
GOES	09	0620	0631	0636						16		C 4.8						
GOES	09	0707	0712	0720						13		C 1.0						
LEAR	09	0816	0819	0834	S18	E25	4138	04	11.2	18	SF	C 1.1	3	C		77		
ISTA	09	0817		0827	S18	E26		04	11.3	10	SN	C 1.1						E
GOES	09	0912	0919	0925						13		C 1.0						
GOES	09	0958	1003	1008						10		C .9						
GOES	09	1035	1043	1050						15		C 1.2						
RAMY	09	1117	1119	1149	S17	E25	4138	04	11.4	32	SN	C 1.1	3	C		60		F
GOES	09	1330	1334	1338						8		C .5						
HOLL	09	1512	1515	1529	S18	E21	4138	04	11.2	17	SN	C 1.0	4	C		110		FH
HOLL	09	1603	1604	1607	S08	E39	4140	04	12.6	4	SF		3	C		18		
RAMY	09	1635	1648	1701	S10	E65		04	14.6	26	SF	C .6	3	C		57		
HOLL	09	1635	1635	1707	S11	E64		04	14.5	32	SF		4	C		37		F
HOLL	09	1744	1745	1809	S18	E20	4138	04	11.3	25	SN	C .5	3	C		44		F
RAMY	09	1745	1745	1801	S17	E21	4138	04	11.3	16	SF	C .5	3	C		41		
HOLL	10	0025	0026	0028	S12	W24	4137	04	8.2	3	SF		3	C		34		
LEAR	10	0721	0730	0740	S11	E58	4141	04	14.7	19	SF		3	C		85		
MANI	10	0724	0731	0738D	S10	E58		04	14.7	14D	SF		1	V		95	1.7	
BUCA	10	0728		0756	S09	E58		04	14.7	28	1F			P	0730	215	4.1	
RAMY	10	1514	1520	1540	S13	W33	4137	04	8.1	26	SF	C .5	3	C		52		
HOLL	10	1515	1520	1535D	S11	W32	4137	04	8.2	20D	SF	C .5	4	C		27		F
GOES	10	1854	1900	1913						19		C .5						
GOES	10	2153	2158	2206						13		C .5						
HOLL	10	2218	2219	2231	S06	E23	4140	04	12.7	13	SF	C .8	3	C		32		F
GOES	10	2250	2255	2301						11		C .7						
GOES	11	0030	0041	0047						17		C 1.0						
GOES	11	0210	0230	0238						28		C .7						
LEAR	11	0213	0216	0226	S12	W40	4137	04	8.1	13	SF		3	C		35		
GOES	11	0715	0718	0720						5		C .6						
GOES	11	1322	1327	1332						10		C .5						
HOLL	11	1450	1500	1514	S08	W48	4137	04	8.0	24	SF		3	C		23		
HOLL	11	1858	1859	1907	S17	W07	4138	04	11.3	9	SF		3	C		35		
HOLL	11	1954E	1955U	2011	S06	E10	4140	04	12.6	17D	SF		3	C		25		
GOES	11	2340	2348	2353						13		C .5						

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Opt	Imp Xray	See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
GOES	12	1421	1430	1439						18		C 1.8						
HOLL	12	1900	1900	1903	S08	E49	4142	04	16.5	3	SF	C .4	3	C		24		
MANI	13	0008	0012	0028	S10	W65		04	8.1	20	SN		1	V		55	1.1	
LEAR	13	0022	0023	0031	S10	W65	4137	04	8.1	9	SN		3	C		50		
GOES	13	0432	0436	0448						16		C .7						
HOLL	13	1525	1525	1537	S09	E36	4142	04	16.3	12	SF	C .4	3	C		27		F
HOLL	13	1633	1633	1639	S08	W77	4137	04	7.9	6	SF		3	C		9		
HOLL	13	1726	1726	1733	S08	E35	4142	04	16.4	7	SF	C .5	3	C		24		
HOLL	13	1746	1759	1800	N20	E60	4144	04	18.3	14	SF		3	C		25		
HOLL	13	1747	1747	1755	S08	W77	4137	04	8.0	8	SF		3	C		11		
PALE	13	2009	2010	2014D	S07	E35	4142	04	16.5	5D	SF		3	C		31		
HOLL	13	2009	2009	2017	S10	E35	4142	04	16.5	8	SF		3	C		36		
HOLL	13	2051	2053	2059	S09	E41	4142	04	16.9	8	SF		3	C		24		
GOES	13	2324	2328	2340						16		C .5						
GOES	14	0002	0007	0010						8		C .6						
GOES	14	0210	0213	0216						6		C .5						
MONT	14	0839E	0848	0946	S13	E51		04	18.2	67D	1N			C	0848	500		B
GOES	14	1234	1237	1243						9		C 2.0						
GOES	14	1424	1427	1430						6		C .6						
GOES	14	1546	1550	1553						7		C .7						
GOES	14	2113	2128	2131			4142			18		C 1.1						
GOES	14	2334	2342	2351						17		C 3.7						
MANI	15	0001E	0002U	0010	N07	E80		04	21.0	9D	SF		1	V				
MANI	15	0200E	0210	0221	S12	W90		04	8.3	21D	SB		1	V				
MANI	15	0219E	0219U	0245	N07	E80		04	21.1	26D	SF		1	V				
GOES	15	0408	0412	0427						19		C .5						
GOES	15	0646	0655	0706						20		C 5.9						
GOES	15	1455	1502	1510						15		C 1.0						
GOES	15	2000	2004	2006						6		C .5						
GOES	16	0015	0019	0021						6		C 1.0						
WEND	17	1506	1508	1512	S10	W67		04	12.6	6	SF			C	1508	56		
GOES	17	1653	1658	1708						15		C .7						
MANI	17	2328	2329	0005	S10	W03		04	17.8	37	SF	C .7	1	V		54	.6	
GOES	18	0122	0148	0228			4150			66		M 6.7						
GOES	18	2141	2159	2206						25		C 3.4						
GOES	19	0003	0006	0009						6		C 1.7						
GOES	19	0217	0220	0222						5		C 2.1						
GOES	19	0531	0533	0536						5		C 1.3						
GOES	19	1334	1337	1340						6		C 1.0						
HOLL	19	1412	1412	1422	S29	W60	4148	04	14.9	10	SF		2	C		18		
HOLL	19	1450	1451	1455	S30	W60	4148	04	14.9	5	SF		3	C		16		
HOLL	19	1519	1520	1524	S30	W61	4148	04	14.8	5	SF		3	C		20		
HOLL	19	1545	1602	1637	S31	W61	4148	04	14.8	52	SF	C .8	3	C		53		
HOLL	19	1552E	1554U	1608	S13	W57		04	15.4	16D	SF		3	C		96		F
HOLL	19	1639	1642	1817	S30	W62	4148	04	14.8	98	SN		3	C		85		K
HOLL	19	1639	1749	1817	S30	W62	4148	04	14.8	98	SN	C .8	3	C		66		K
GOES	19	1745	1748	1750			4148			5		C .8						
HOLL	19	1819	1824	1843	S29	W62	4148	04	14.9	24	SN		3	C		37		K
HOLL	19	1819	1835	1843	S29	W62	4148	04	14.9	24	SN	C 1.8	3	C		64		K
HOLL	19	1900	1905	1910	S30	W62	4148	04	14.9	10	SN	C .8	3	C		24		
HOLL	19	1931	1934	1939	S30	W62	4148	04	14.9	8	SN		3	C		42		
GOES	19	2006	2010	2012						6		C 1.0						
HOLL	19	2022E	2022U	2026	S30	W63	4148	04	14.9	4D	SF		3	C		23		
HOLL	19	2123	2127	2130	S30	W63	4148	04	14.9	7	SF		3	C		24		
HOLL	19	2159	2159	2210	S29	W64	4148	04	14.9	11	SF	C 1.2	3	C		29		F
HOLL	19	2236	2240	2243	S30	W64	4148	04	14.9	7	SF		3	C		22		
HOLL	19	2346	2350	0001	N09	E21	4151	04	21.6	15	SF		3	C		21		F
LEAR	20	0019	0023U	0037	S13	E71	4150	04	25.4	18	SF	C 2.2	3	C		79		
HOLL	20	0020	0024	0037	S14	E72	4150	04	25.5	17	SN	C 2.2	3	C		110		F
MANI	20	0022E	0024	0037	S13	E72		04	25.5	15D	1F		1	V		95	2.2	F
GOES	20	0142	0145	0148						6		C 1.8						
LEAR	20	0618	0619	0648	S13	E69	4150	04	25.5	30	SF	C 2.1	3	C		47		
LEAR	20	0650	0703	0748	S30	W66	4148	04	15.1	58	SN	C 2.2	3	C		26		

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LEAR	20	0755	0800	0814	S11	W37	4149	04	17.5	19	SF		3	C		30		U
GOES	20	1220	1234	1240			4152			20		C 1.2						
HOLL	20	1353E	1355	1410	S10	E59	4150	04	25.0	17D	SF		3	C		30		
GOES	20	1551	1555	1559						8		C 1.0						
HOLL	20	1726	1729	1818	S13	E63	4150	04	25.5	52	SF	C 2.7	3	C		134		F
GOES	20	2054	2058	2102						8		C 1.3						
MANI	20	2319E	2322	0001D	S28	W80		04	14.7	42D	SN		1	V				
HOLL	21	0115E	0116U	0121	N09	W46	4146	04	17.6	6D	SF		2	C		20		F
GOES	21	0144	0153	0157						13		C 3.9						
GOES	21	0346	0350	0400						14		C 1.8						
GOES	21	0428	0437	0448						20		C 3.7						
LEAR	21	0515	0517	0538	S13	E57	4150	04	25.5	23	SF		3	C		32		
GOES	21	0644	0648	0702						18		C 3.7						
GOES	21	0905	0908	0910						5		C 2.0						
GOES	21	0921	0924	0927						6		C 2.0						
GOES	21	1007	1010	1012						5		C 2.0						
GOES	21	1030	1039	1044						14		C 2.6						
GOES	21	1117	1120	1122						5		C 1.9						
GOES	21	1127	1132	1138						11		C 3.1						
GOES	21	1243	1246	1248						5		C 1.4						
RAMY	21	1326	1328	1333	S08	E84		04	27.9	7	SF		3	C		11		
GOES	21	1409	1412	1420						11		C 1.4						
GOES	21	1429	1433	1438						9		C 2.5						
GOES	21	1553	1556	1558						5		C 1.9						
GOES	21	1611	1614	1617						6		C 1.8						
GOES	21	1634	1637	1639						5		C 1.8						
HOLL	21	1831	1832	1844	S10	E87	4154	04	28.3	13	SN		3	C		31		
HOLL	21	1844	1846	1906	S13	E52	4150	04	25.7	22	SF		3	C		42		F
PALE	21	1858E	1902	1925D	S08	E87	4154	04	28.3	27D	1N	C 1.3	3	C				
HOLL	21	1933	1935	1950	S10	E84	4154	04	28.1	17	SF	C 1.1	3	C		12		F
HOLL	21	1956	1959	2005	S10	E85	4154	04	28.2	9	SN		3	C		25		F
HOLL	21	2011	2013	2025	S10	E84	4154	04	28.2	14	SF		3	C		8		
HOLL	21	2042	2042	2047	N08	W17	4146	04	20.6	5	SN	C 2.2	3	C		53		F
GOES	21	2048	2104	2109						21		C 7.8						
HOLL	21	2237	2238U	2251D	N07	W18	4146	04	20.6	14D	SF		2	C		46		F
GOES	22	0001	0008	0014						13		C 4.0						
PEKG	22	0003	0015	0040	S18	E90		04	28.9	37	N			C	0015			A
GOES	22	0042	0045	0047						5		C 1.9						
PEKG	22	0110	0120	0130D	S12	E46		04	25.5	20D	SN			P	0120	55	.8	E
GOES	22	0142	0145	0152						10		C 2.2						
LEAR	22	0307	0311	0332	S25	E15	4152	04	23.3	25	SF	C 1.8	1	C		134		
PEKG	22	0314E	0314	0330	S24	E15		04	23.3	16D	1N	C 1.8		C	0314	244	2.7	F
GOES	22	0413	0416	0426						13		C 2.0						
GOES	22	0535	0552	0556						21		C 1.4						
GOES	22	0649	0654	0658						9		C 2.3						
GOES	22	0746	0750	0754						8		C 1.3						
PEKG	22	0823	0826	0831	S13	E35		04	25.0	8	SN			C	0826	29	.4	D
GOES	22	0905	0919	0923						18		C 9.9						
GOES	22	1032	1035	1039						7		C 1.9						
GOES	22	1313	1319	1324						11		C 2.3						
HOLL	22	1338	1339	1356	S12	E37	4150	04	25.4	18	SF		2	C		18		F
GOES	22	1536	1540	1545						9		C 1.9						
GOES	22	1629	1633	1638						9		C 1.2						
HOLL	22	1734	1734	1740	S11	E72	4154	04	28.2	6	SF	C 1.3	3	C		14		F
GOES	22	1943	1944	1951						8		C 1.5						
HOLL	22	2236	2240	2320	S13	E33	4150	04	25.4	44	SF		3	C		82		F
HOLL	22	2243	2244	2251	S21	E78	4154	04	28.9	8	SF	C 1.4	3	C		34		
GOES	23	0123	0136	0147						24		C 2.0						
HOLL	23	0124	0127U	0135D	S18	E59	4156	04	27.6	11D	SN		2	C		110		F
GOES	23	0241	0252	0256						15		C 2.1						
LEAR	23	0516	0517	0555D	S10	E22	4150	04	24.9	39D	SF	C 1.9	3	C		49		F
LEAR	23	0658	0659	0722	S13	E25	4150	04	25.2	24	SF	C 2.3	3	C		49		F
PEKG	23	0700E	0706	0710D	S13	E29		04	25.5	10D	1N			P	0706	218	2.6	F
LEAR	23	0805	0809	0819	S09	E67	4154	04	28.4	14	SF		3	C		20		F
GOES	23	0944	1011	1033						49		C 2.5						
GOES	23	1312	1317	1336						24		C 1.4						
RAMY	23	1428	1430	1433	S17	E58		04	28.0	5	SN		3	C		41		
GOES	23	1750	1808	1819						29		C 2.4						

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GOES	23	2126	2130	2134						8		C 1.1						
GOES	23	2219	2300	2301						42		C 2.1						
GOES	23	2236	2239	2241						5		C 2.1						
HOLL	24	0038	0044	0106	S16	E63	4156	04	28.8	28	SF		3	C		44		K
HOLL	24	0038	0057	0106	S16	E63	4156	04	28.8	28	SN	C 2.1	3	C		100		F K
LEAR	24	0056	0057	0109	S17	E68	4156	04	29.2	13	SF	C 2.1	3	C		28		
LEAR	24	0113	0117	0128	N08	W47	4146	04	20.5	15	SF		3	C		35		
LEAR	24	0126	0129	0411	S15	E70	4156	04	29.4	165	SF		3	C		44		K
LEAR	24	0126	0323	0411	S15	E70	4156	04	29.4	165	SN	C 4.1	3	C		56		F K
PURP	24	0128	0147U	0210	S17	E69		04	29.3	42	1B			C	0147	158		
PEKG	24	0145E	0156	0210	S15	E68		04	29.2	25D	SN			P	0156	101		F
LEAR	24	0624	0625	0629	S13	E15	4150	04	25.4	5	SF		3	C		41		
RAMY	24	1232	1232	1240	N04	W53	4146	04	20.6	8	SN		3	C		28		
GOES	24	1347	1410	1430						43		C .9						
HOLL	24	1508	1509	1534	S12	E09	4150	04	25.3	26	SF		3	C		54		F
RAMY	24	1514	1515	1521	S21	E58	4156	04	29.1	7	SN	C 1.2	3	C		31		
HOLL	24	1515	1515	1521	S20	E55	4156	04	28.8	6	SN	C 1.2	3	C		35		
HOLL	24	1553	1555	1636	S17	E60	4156	04	29.2	43	SF		3	C		12		K
HOLL	24	1553	1607	1636	S17	E60	4156	04	29.2	43	SF		3	C		79		F K
GOES	24	1648	1651	1653						5		C 1.0						
HOLL	24	1748	1750	1755	S19	E54	4156	04	28.9	7	SF		3	C		27		
HOLL	24	1809	1810	1818	S16	E57	4156	04	29.1	9	SF		3	C		51		
RAMY	24	1810	1811	1828	S15	E57	4156	04	29.1	18	SF		3	C		21		K
RAMY	24	1810	1822	1828	S15	E57	4156	04	29.1	18	SF		3	C		17		K
RAMY	24	1858	1902	1908	S20	E53	4156	04	28.8	10	SF		3	C		27		
RAMY	24	1912	1912	1932	S10	E47	4154	04	28.3	20	SN	C 1.2	3	C		98		
HOLL	24	1912	1912	1936	S06	E45	4154	04	28.2	24	SN	C 1.2	3	C		84		
RAMY	24	1921	1924	1929	S19	E53	4156	04	28.9	8	SF	C 1.2	3	C		57		
HOLL	24	1923	1924	1931	S21	E59	4156	04	29.3	8	SF	C 1.2	3	C		45		
HOLL	24	2041	2044	2050	S12	E07	4150	04	25.4	9	SF	C 1.1	3	C		35		F
RAMY	24	2043	2045	2054	S11	E07	4150	04	25.4	11	SF	C 1.1	3	C		50		
HOLL	24	2051	2052	2054	S20	E53	4156	04	28.9	3	SN		3	C		40		
HOLL	24	2105	2105	2110	S05	E75	4157	04	30.5	5	SF		3	C		11		
RAMY	24	2107	2107	2127	S18	E56	4156	04	29.1	20	SF	C 1.7	3	C		27		
HOLL	24	2107	2108	2115	S17	E56	4156	04	29.1	8	SN	C 1.7	3	C		52		F
HOLL	24	2109	2109	2123	S12	E46	4154	04	28.3	14	SF		3	C		19		
HOLL	24	2254	2259	2304	S17	E52	4156	04	28.9	10	SF		3	C		15		
HOLL	25	0028	0032	0036	S17	E54	4156	04	29.1	8	SF		3	C		17		F
LEAR	25	0204	0209	0219	S15	E52	4156	04	29.0	15	SF		3	C		22		F
LEAR	25	0341	0342	0347	S16	E52	4156	04	29.1	6	SN		3	C		35		
LEAR	25	0347	0350	0428	S12	E02	4150	04	25.3	41	SN		3	C		59		
LEAR	25	0428	0430	0437	S16	E51	4156	04	29.1	9	SN		3	C		32		
LEAR	25	0433	0441	0518	S04	E68	4157	04	30.3	45	SN	C 6.3	3	C		64		F
PURP	25	0439E	0452U	0459	S04	E71		04	30.5	20D	SB			C	0452	55		E
PURP	25	0614	0638	0654	S11	E41		04	28.3	40	SB			C	0638	83	1.1	
LEAR	25	0713	0722	0757	S15	E49	4156	04	29.0	44	SN	C 2.9	3	C		131		F
WEND	25	0714	0718	0727	S17	E51		04	29.2	13	SN	C 2.9		C	0718	94	1.6	
PURP	25	0719	0722	0725D	S17	E48		04	29.0	6D	1B			P	0722	158	2.4	
ISTA	25	0720		0736	S16	E40		04	28.3		SN							E
BUCA	25	0720E		0800	S16	E52		04	29.3	40D	1N			C	0725	161	2.6	
KAND	25	1045	1104	1110	S13	E49		04	29.1	25	SN			C		29	.5	D
GOES	25	1045	1049	1054						9		C 1.1						
GOES	25	1145	1150	1154						9		C 1.2						
KAND	25	1311	1312	1316	S18	E43		04	28.8	5	SF	C 1.2		C		21	.3	D
RAMY	25	1314	1314	1320D	S16	E45	4156	04	29.0	6D	SB	C 1.2	3	C		78		FE
HOLL	25	1533	1533	1536	S16	E42	4156	04	28.8	3	SF		3	C		35		
RAMY	25	1541	1618	1639	S16	E46	4156	04	29.1	58	SF	B 9.2	3	C		98		
HOLL	25	1611	1612	1641	S17	E47	4156	04	29.2	30	SF	B 9.2	3	C		26		FH
HOLL	25	1615	1616	1623	S13	E39	4154	04	28.6	8	SF	C 1.7	3	C		86		
RAMY	25	1616	1618	1623	S12	E39	4154	04	28.6	7	SN	C 1.7	3	C		63		
HOLL	25	1735	1736	1740	S15	E43	4156	04	29.0	5	SF	B 8.6	3	C		21		
HOLL	25	1941	1947	1958	N13	W57	4151	04	21.5	17	SF		3	C		20		
HOLL	25	2100	2101	2117	S12	W04	4150	04	25.6	17	SF		3	C		31		
HOLL	25	2116	2121	2124	S18	E43	4156	04	29.2	8	SF		3	C		23		
HOLL	25	2140	2142	2214	S17	E43	4156	04	29.2	34	SB	C 2.2	3	C		66		
MANI	26	0043	0045	0055	S03	E59		04	30.4	12	SF	C 1.2	1	V		50	.9	
HOLL	26	0047E	0047U	0057	S04	E59	4157	04	30.4	10D	SF		3	C		58		
PURP	26	0118	0135	0145	S16	E39		04	29.0	27	SB			C	0135	48	.6	E

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Imp See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
GOES	26	0217	0226	0230						13		C 1.1						
LEAR	26	0305	0312	0333D	S15	E38	4156	04	29.0	28D	SB		3	C		147		F
PURP	26	0312E	0313	0326	S16	E38		04	29.0	14D	SB			C	0313	62	.8	E
GOES	26	0507	0510	0518						11		C 1.2						
LEAR	26	0532	0533	0545	S14	W16	4150	04	25.0	13	SF		3	C		24		
LEAR	26	0700	0703	0716	N11	W64	4151	04	21.5	16	SF	C 1.4	3	C		38		
LEAR	26	0714	0716	0732	S14	W17	4150	04	25.0	18	SN		3	C		28		
PURP	26	0718	0723	0726	S14	W17		04	25.0	8	SN			C	0723	28	.3	D
LEAR	26	0756	0757	0804	S17	E37	4156	04	29.1	8	SF		3	C		27		
LEAR	26	0808	0814	0856	S09	W18	4150	04	25.0	48	1B	C 3.0	3	C		240		FE
WEND	26	0812	0824	0845	S08	W18		04	25.0	33	SN			C	0824	88	1.0	
MANI	26	0814E	0815	0854	S08	W17		04	25.1	40D	1B		1	V		220	2.4	F
PURP	26	0821	0823U	0837	S12	W18		04	25.0	16	SN			C	0823	124	1.3	
RAMY	26	1142	1142	1202	S17	E33	4156	04	29.0	20	SN		3	C		23		
RAMY	26	1246	1248	1301	S12	W17	4150	04	25.3	15	SF		3	C		77		
RAMY	26	1313	1315	1336	S16	E33	4156	04	29.1	23	SF		3	C		49		
HOLL	26	1315	1315	1324	S15	E32	4156	04	29.0	9	SF		3	C		18		F
RAMY	26	1501	1503	1515	S14	W17	4150	04	25.3	14	SN	C 1.2	3	C		109		
HOLL	26	1501	1503	1510	S14	W17	4150	04	25.3	9	SN	C 1.2	3	C		81		
HOLL	26	1502	1502	1509	S15	E31	4156	04	29.0	7	SF		3	C		20		
RAMY	26	1607	1610	1631	S15	E32	4156	04	29.1	24	SN	B 9.5	3	C		40		
HOLL	26	1723	1724	1743	S03	E47	4157	04	30.2	20	SF		3	C		28		
HOLL	26	1745	1745	1807	S15	E30	4156	04	29.0	22	SF		3	C		20		
RAMY	26	1758	1800	1825	S13	E58		05	1.1	27	SF	B 8.6	3	C		30		
HOLL	26	1759	1759	1813	S13	E58		05	1.1	14	SN		3	C		15		F
HOLL	26	1814	1815	1823	S15	E28	4156	04	28.9	9	SF		3	C		32		
HOLL	26	1919	1933	1959	S03	E48	4157	04	30.4	40	SN	B 9.6	3	C		62		F
MANI	26	2340	2341	0006	S09	W25		04	25.1	26	SF	C 2.5	1	V		80	.9	
MANI	27	0248E	0255	0304	S20	E22		04	28.8	16D	SN	M 1.1	1	V		120	1.4	F
GOES	27	0821	0825	0828						7		C 1.0						
GOES	27	0849	0853	0857						8		C 1.1						
GOES	27	0900	0908	0913						13		C 1.2						
GOES	27	1101	1104	1107						6		B 9.1						
GOES	27	1113	1120	1125						12		C 1.0						
GOES	27	1148	1155	1200						12		C 1.1						
GOES	27	1313	1317	1321						8		C 1.1						
RAMY	27	1350	1356	1426	S19	E17	4156	04	28.9	36	1B	M 1.3	3	C		239		K
RAMY	27	1350	1416	1426	S19	E17	4156	04	28.9	36	SN		3	C		123		K
HOLL	27	1350	1350	1428	S19	E16	4156	04	28.8	38	SN		2	C		68		K
HOLL	27	1350	1356	1428	S19	E16	4156	04	28.8	38	1B	M 1.3	2	C		241		FHK
MONT	27	1355E	1400	1400D	S20	E17		04	28.9	5D	1N			C	1400	300		
HOLL	27	1409	1412	1430	S15	E26		04	29.6	21	SN		2	C		33		
HOLL	27	1532	1535	1546	S16	E26		04	29.6	14	SN		3	C		39		F
HOLL	27	1700	1701	1736	S09	E08	4154	04	28.3	36	SN	C 2.1	3	C		37		UF
HOLL	27	1701	1705	1714	S16	E28		04	29.8	13	SN	C 1.8	3	C		46		F
RAMY	27	1712	1754	1754D	S16	E25	4156	04	29.6	42D	SB	C 3.3	3	C		131		
HOLL	27	1719	1719	1729	S15	E17	4156	04	29.0	10	SF	C 2.0	3	C		23		F
HOLL	27	1748	1756	1831	S15	E24	4162	04	29.6	43	SB	C 3.3	3	C		112		F K
HOLL	27	1748	1812	1831	S15	E24	4162	04	29.6	43	SN		3	C		63		K
RAMY	27	1749	1750	1755	S04	E37	4157	04	30.5	6	SF		3	C		74		
HOLL	27	1808	1813	1829	S09	W37	4150	04	25.0	21	SF		3	C		28		F
HOLL	27	1916	1916	1942	S16	E24	4162	04	29.6	26	SF	C 3.4	3	C		20		K
HOLL	27	1916	1931	1942	S16	E24	4162	04	29.6	26	SN		3	C		121		K
RAMY	27	1928	1932	1934D	S19	E28	4162	04	29.9	6D	1N		3	C		367		
GOES	27	2120	2129	2133						13		C 4.0						
HOLL	27	2207	2208	2225	S16	E24	4162	04	29.7	18	SB	C 3.0	3	C		116		F
MANI	27	2208	2209	2213D	S15	E24		04	29.7	5D	SB		1	V		110	1.2	F
HOLL	27	2234	2234	2246	S17	W39	4150	04	25.0	12	SF		3	C		23		S
HOLL	27	2238	2239	2246	N19	E04	4160	04	28.2	8	SF		3	C		21		
HOLL	27	2251	2253	2301	S13	E09	4154	04	28.6	10	SF		3	C		33		F
HOLL	27	2318	2320	2330	S15	E21	4162	04	29.6	12	SN	C 2.3	3	C		90		F
HOLL	27	2334	2335	2348	S16	E10	4154	04	28.7	14	SN		3	C		42		F
HOLL	27	2341	0009	0024	S16	E21	4162	04	29.6	43	SN		3	C		109		F K
HOLL	27	2341	2342	0024	S16	E21	4162	04	29.6	43	SN		3	C		89		K
GOES	27	2341	2349	2352			4154			11		C 2.9						
HOLL	27	2353	2354	0034	S03	E34	4157	04	30.5	41	SN		3	C		52		F
LEAR	28	0006	0008	0014	S15	E20	4162	04	29.5	8	SN	C 3.2	3	C		41		
HOLL	28	0020	0028	0037	N19	E02	4160	04	28.2	17	SN		3	C		33		
LEAR	28	0025	0029	0037	N18	E02	4160	04	28.2	12	SN		3	C		23		

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	Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp	Opt	Xray	See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
	LEAR	28	0045	0049	0104	S17	E10	4154	04	28.8	19		SN		3	C		74		F
[	KAND	28	0709	0718	0732	S16	E18		04	29.7	23		SN	C 2.0		C		71	.8	E
[	LEAR	28	0716	0718	0753	S15	E17	4162	04	29.6	37		SF	C 2.0	3	C		28		
	LEAR	28	0737	0738	0801	S10	E00	4154	04	28.3	24		SF		3	C		40		
[	MONT	28	0944	0955	1005D	S08	E24		04	30.2	21D		SN			C	0955	220		
[	KAND	28	0948	0958	1010	S06	E22		04	30.1	22		SN			C		46	.5	E
	KAND	28	0948	0958	1010	S07	E27		04	30.4	22		SN			C		46	.5	E
	KAND	28	0948	0958	1010	S12	E21		04	30.0	22		SB			C		62	.7	E
	KAND	28	0960	0932	0935	S06	E22		04	30.1	1415		SF			C		21	.2	D
	KAND	28	1050	1052	1109	S03	E24		04	30.2	19		SB	M 1.2		C		166	1.6	E
	KAND	28	1139	1141	1154	S10	W03		04	28.3	15		SF			C		62	.6	E
	GOES	28	1540	1551	1554						14			C 2.2						
	RAMY	28	1638	1639	1700	N14	W07	4159	04	28.2	22		SN		3	C		127		
	GOES	28	1720	1723	1725						5			C 1.6						
	RAMY	28	1727	1744	1758	S16	E14	4162	04	29.8	31		SF	C 2.2	3	C		35		
	RAMY	28	1831	1841	1845D	S18	E04	4154	04	29.1	14D		1N	C 3.4	3	C		275		F
	RAMY	28	1908	1908	1913	S06	E16	4157	04	30.0	5		SN		3	C		57		
	PALE	28	2209	2211	2216	N12	W13	4159	04	27.9	7		SN	C 2.4	3	C		52		F
	GOES	29	0401	0409	0415						14			C 1.1						
[	LEAR	29	0615	0620	0711	S12	E81		05	5.4	56		3N	C 3.5	3	C				K
[	LEAR	29	0615	0630	0711	S12	E81		05	5.4	56		2N		3	C				K
	ISTA	29	0625		0640	S20	E77		05	5.2			SN							G
[	ISTA	29	0630		0640	S14	W07		04	28.7			1N							U
[	LEAR	29	0635	0636	0713	S17	W06	4154	04	28.8	38		SF		3	C		91		
	GOES	29	1557	1559	1603				04	29.7	6			C 8.2	S					
	GOES	29	1757	1809	1829				04	29.7	32			C 1.4	S					
	GOES	29	2012	2015	2017				04	29.8	5			C 2.1	S					
[	PALE	29	2350	2356U	0006D	S05	W02	4157	04	29.8	16D		SF	C 1.3	3	C		41		F
[	MANI	29	2352E	2357	0010	S04	W02		04	29.8	18D		SF	C 1.3	1	V		35	.4	F
[	LEAR	30	0047	0049	0116	S09	E72	4165	05	5.4	29		SN	C 3.0	3	C		45		F
[	PALE	30	0058E	0108U	0113D	S09	E68	4165	05	5.1	15D		SF		3	C		119		F
	LEAR	30	0253	0253	0258	S15	W20	4154	04	28.6	5		SF		3	C		27		
	PALE	30	0255E	0316U	0336	S21	W13	4154	04	29.1	41D		SF	C 2.2	3	C		73		
	LEAR	30	0306	0311	0328	S15	W20	4154	04	28.6	22		SF		3	C		55		
[	LEAR	30	0336	0339	0406	S09	E72	4165	05	5.6	30		SN	C 4.2	3	C		60		F
[	PEKG	30	0337	0347	0352	S10	E72		05	5.6	15		SF			C	0347	50		E
	GOES	30	0658	0701	0706				04	30.3	8			B 8.8	S					
	LEAR	30	0721	0722	0738	S09	E70	4165	05	5.6	17		SF	C 2.0	3	C		19		F
[	LEAR	30	0803	0806	0900	S09	E68	4165	05	5.4	57		SN		3	C		119		F
[	MANI	30	0804	0805	0856	S10	E66		05	5.3	52		SN		1	V		95	2.0	F
[	LEAR	30	0805	0818	0915D	S17	W17	4154	04	29.0	70D		2B	M 2.9	3	C		917		ZU
[	MANI	30	0805	0815	0938D	S16	W18		04	29.0	93D		2B	M 2.9	1	V		850	9.4	ZU
[	ISTA	30	0808		0855	S17	W17		04	29.0			2N							FI
	MONT	30	0932E	0932	1030D	S19	W15		04	29.3	58D		2B			C	0932	850		
	GOES	30	1428	1430	1435						7			B 8.8						
	GOES	30	1944	1950	2000						16			C 1.3						
	GOES	30	2257	2300	2303						6			B 9.4						
	LEAR	30	2344	2344	2356	S16	W18	4162	04	29.6	12		SN	B 8.0	3	C		50		

"Remarks":

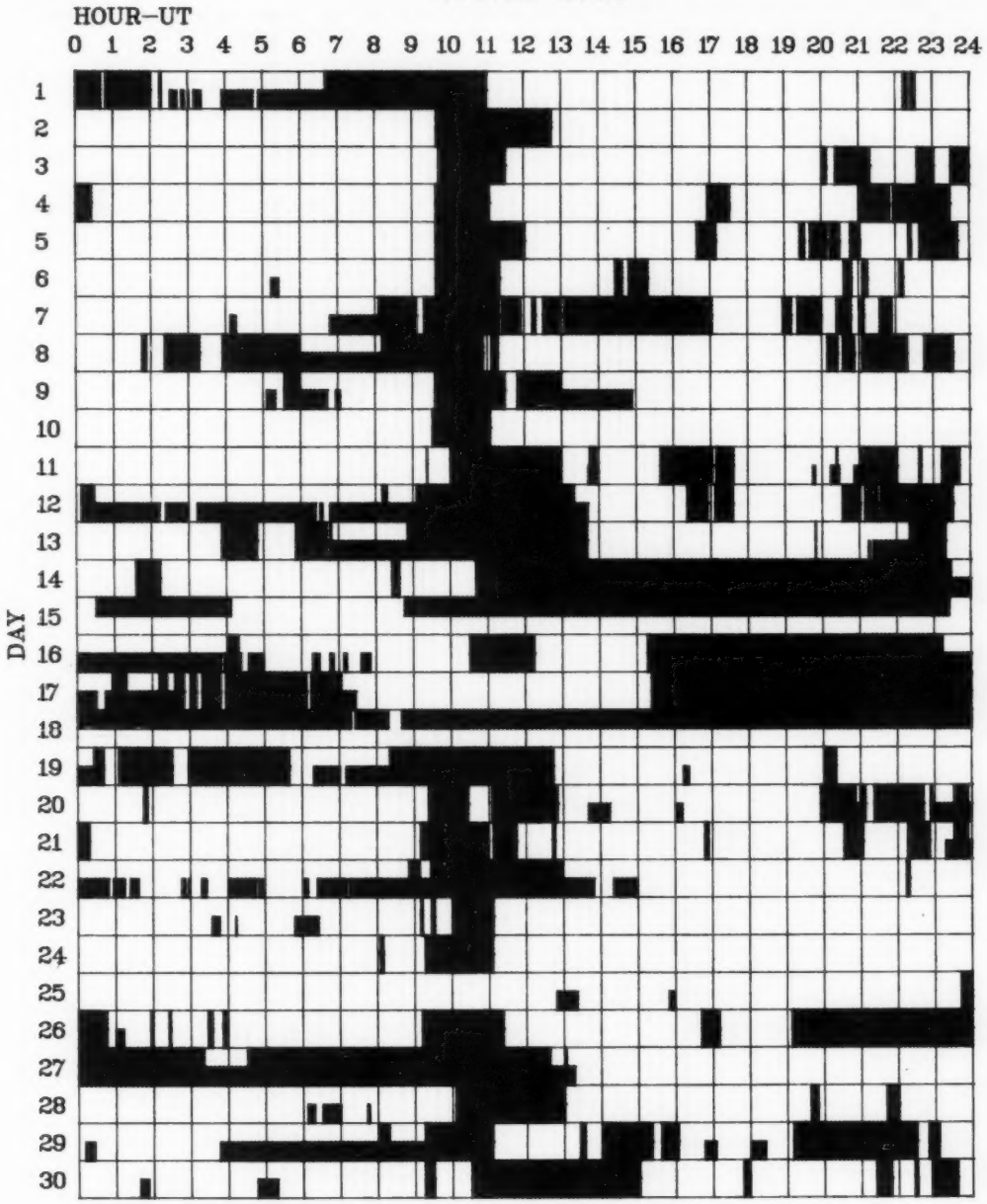
A = Eruptive prominence whose base is less than 90° from central meridian.
B = Probably the end of a more important flare.
C = Invisible 10 minutes before.
D = Brilliant point.
E = Two or more brilliant points.
F = Several eruptive centers.
G = No visible spots in the neighborhood.
H = Flare accompanied by high-speed dark filament.
I = Active region very extended.
J = Distinct variations of plage intensity before or after the flare.
K = Several intensity maxima.
L = Existing filaments show signs of sudden activity.
M = White-light flare.
N = Continuous spectrum shows effects of polarization.
O = Observations have been made in the H and K lines of Ca II.
P = Flare shows helium D3 in emission.
Q = Flare shows Balmer continuum in emission.
R = Marked asymmetry in H-alpha line suggests ejection of high-velocity material.
S = Brightness follows disappearance of filament in same position.
T = Region active all day.
U = Two bright branches, parallel or converging.
V = Occurrence of an explosive phase: important, expansion within roughly 1 minute that often includes a significant intensity increase.
W = Great increase in area after time of maximum intensity.
X = Unusually wide H-alpha line.
Y = System of loop-type prominences.
Z = Major sunspot umbra covered by flare.

The 4-digit number appearing under "Remarks" denotes the calcium plage region number assigned by the Space Environment Services Center in Boulder, Colorado.

INTERVALS OF NO FLARE PATROL OBSERVATION

FOR PRECEDING SOLAR FLARE TABLE

APRIL 1983



Observatories included in total patrol:

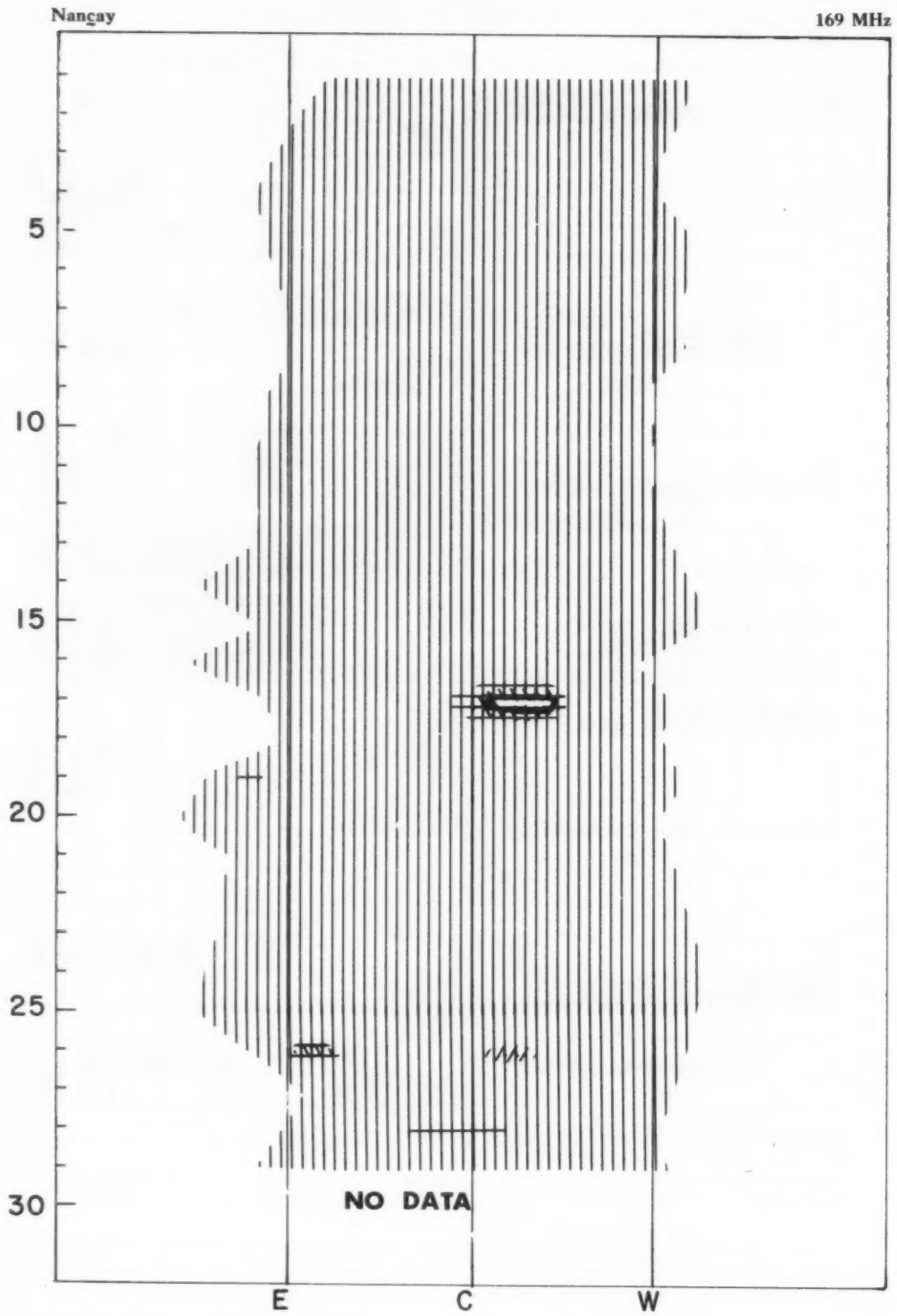
Bucharest	Huancayo	Monte Mario	Peking	Ramey
Holloman	Learmonth	Palehua	Purple Mt.	Wendelstein

Times of no flare patrol are shown by the shaded area for each day divided into times of no cinematographic patrol (bottom half of day) and times of neither visual nor cinematographic patrol (top half of day).

22
Apr 83

SOLAR RADIO EMISSION
INTERFEROMETRIC OBSERVATION

APRIL 1983

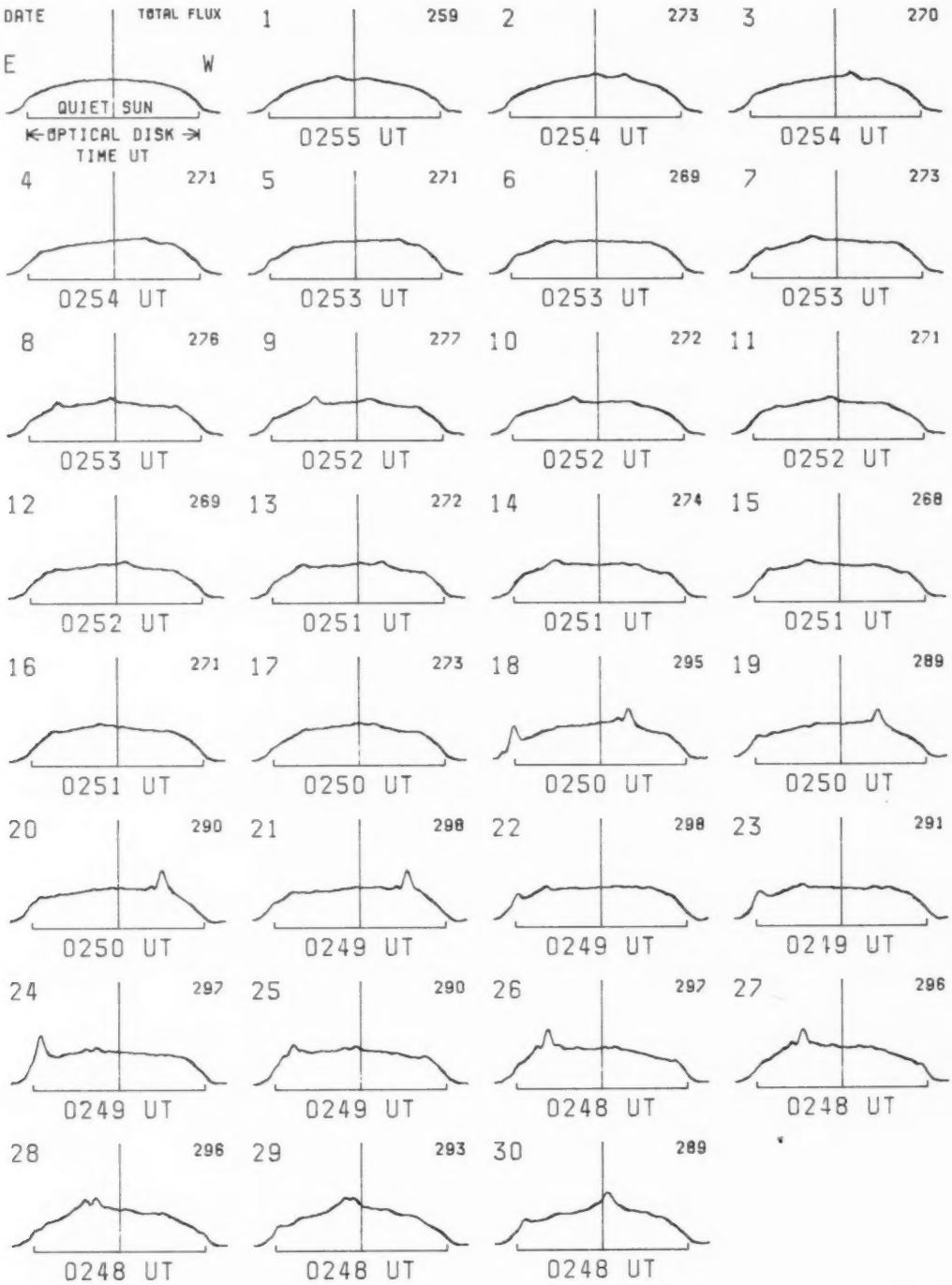


EAST-WEST SOLAR SCANS

APRIL 1983

TOYOKAWA, JAPAN

3 CM
FAN BEAM WITH 1.1 MINUTES OF ARC



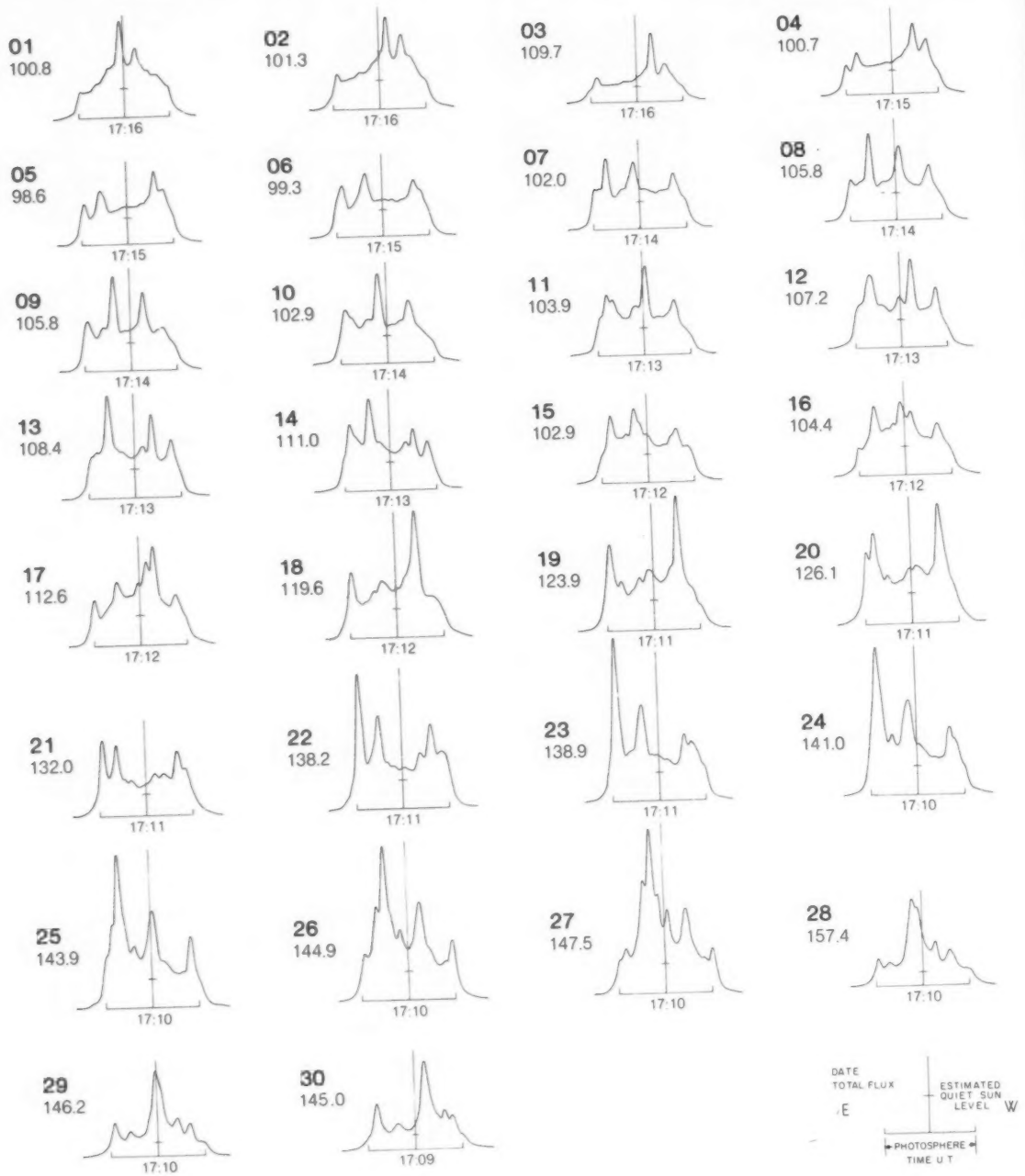
24
Apr 83

EAST-WEST SOLAR SCANS

APRIL 1983

ALGONQUIN RADIO OBSERVATORY
CANADA

10·7 cm
Fan Beam with 1·5 minutes of arc
E-W Resolution



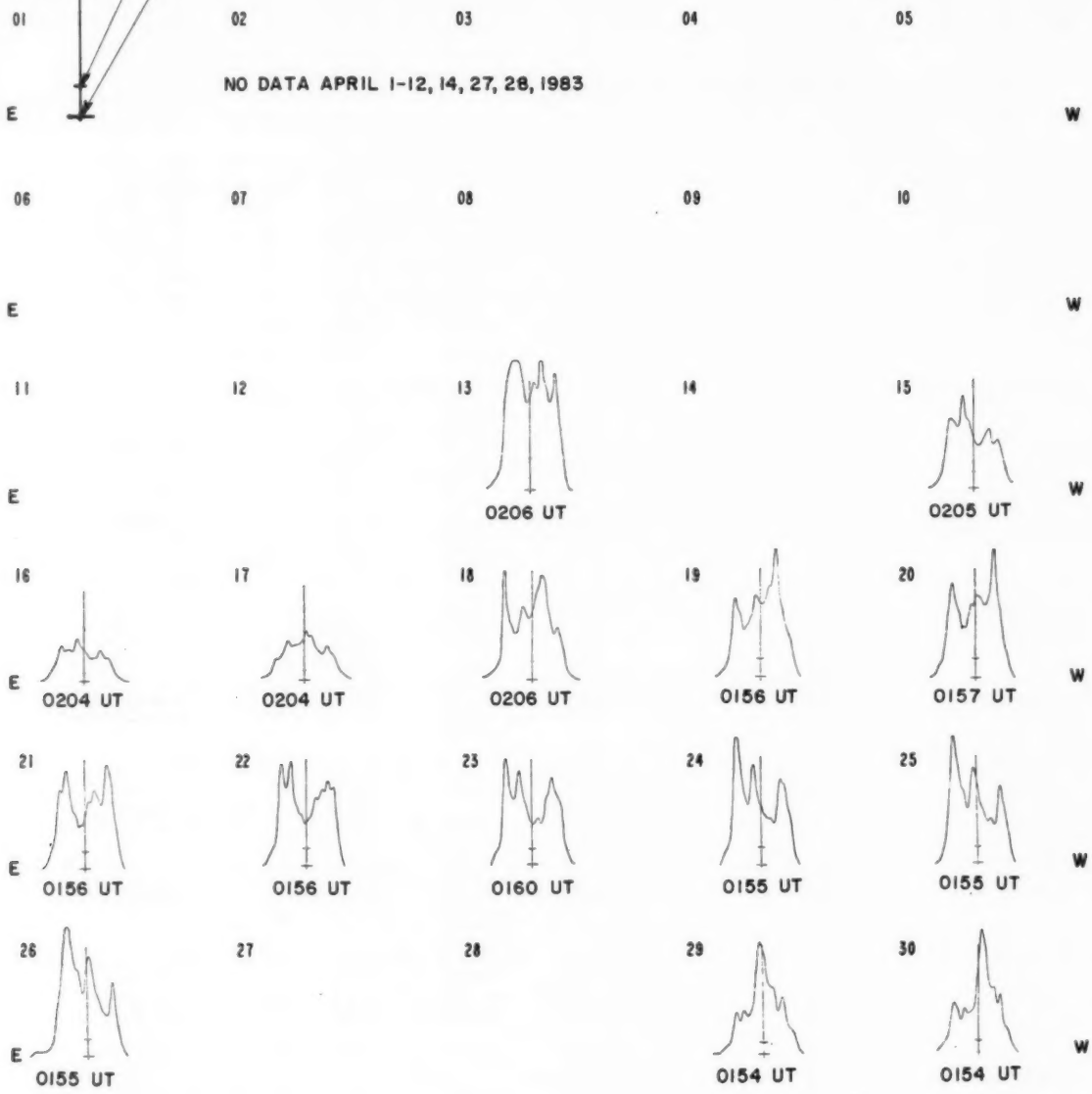
EAST-WEST SOLAR SCANS

Fleurs, Australia

APRIL 1983

21 cm
Fan-Beam with 2 minutes of arc
E-W Resolution

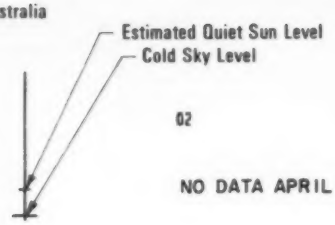
NO DATA APRIL 1-12, 14, 27, 28, 1983



26
Apr 83

EAST-WEST SOLAR SCANS

Fleurs, Australia — APRIL 1983 — 43 cm Fan-Beam with 4 minutes of arc E-W Resolution



NO DATA APRIL 1-12, 14, 27, 29, 1983

01	02	03	04	05
06	07	08	09	10
11	12	13 0206 UT	14	15 0206 UT
16 0204 UT	17 0204 UT	18 0206 UT	19 0156 UT	20 0156 UT
21 0156 UT	22 0156 UT	23 0155 UT	24 0155 UT	25 0155 UT
26 0155 UT	27	28 0155 UT	29	30 0154 UT

E ... W

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

APRIL 1983

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
01	2695	LEAR	8	S	0158.3	0158.6	.7	6.0			QL=6 ST=2 TYP=3
	8800	PALE	8	S	0254.8	0255.1	.3	23.0			QL=6 ST-2 TYP=3
	2800	OTTA	8	S	1808.0	1808.3	.5	2.0	1.0		
	2695	PENT	21	GRF	2220.0	2300.0	115.0	1.6	.8		
	2695	PENT	1	S	2250.9	2251.3	1.2	1.0	.5		
02	2800	OTTA	1	S	1942.0	1942.8	2.0	1.6	.8		
03	8800	LEAR	8	S	0453.8	0454.5	1.8	6.0			QL=6 ST=2 TYP=3
	2695	ATHN	8	S	1204.3	1204.6	1.7	27.0			QL=6 ST=2 TYP=3
	8800	ATHN	47	GB	1204.3	1204.6	2.2	110.0			QL=6 ST=2 TYP=5
	2695	ATHN	8	S	1303.6	1304.3	1.4	27.0			QL=6 ST=3 TYP=3
	8800	ATHN	47	GB	1303.6	1304.3	1.9	110.0			QL=6 ST=3 TYP=5
	8800	SGMR	47	GB	1304.1	1304.6	1.5	64.0			QL=6 ST=2 TYP=5
	2695	ATHN	8	S	1304.3	1304.6	1.7	27.0			QL=6 ST=3 TYP=3
	8800	ATHN	47	GB	1304.3	1304.6	2.2	110.0			QL=6 ST=3 TYP=5
	2695	SGMR	8	S	1304.5	1304.6	.6	26.0			QL=6 ST=2 TYP=3
	2800	OTTA	21	GRF	1650.0	1710.0	120.0	8.4	4.0		
	2800	OTTA	8	S	1658.9	1658.9	.1	1.8			
04	8800	LEAR	20	GRF	0234.0	0245.3	41.0	11.0			QL=6 ST=2 TYP=2
	8400	BERN	4	S/F	1304.0	1304.8	2.0	88.0			
	2800	OTTA	3	S	1326.2	1326.7	2.0	17.4	5.0		
	2695	SGMR	8	S	1326.6	1326.6	.4	20.0			QL=6 ST=2 TYP=3
	2800	OTTA	4	S/F	1642.0	1643.2	5.0	130.0	17.4		
	2695	ATHN	8	S	1642.3	1643.1	1.3	32.0			QL=1 ST=2 TYP=3
	2695	SGMR	47	GB	1642.6	1643.3	1.5	110.0			QL=6 ST=2 TYP=5
	8800	ATHN	47	GB	1643.0	1643.1	1.0	60.0			QL=1 ST=3 TYP=5
	8800	SGMR	47	GB	1643.1	1643.3	.7	91.0			QL=6 ST=2 TYP=5
	2800	OTTA	21	GRF	2000.0	2030.0	70.0	1.8	.9		
	2695	PENT	1	S	2002.5	2003.0	1.5	3.6	1.8		
05	8800	ATHN	8	S	0426.1	0426.6	1.4	33.0			QL=6 ST=2 TYP=3
	2695	ATHN	8	S	0426.6	0426.8	.7	16.0			QL=6 ST=2 TYP=3
	2800	OTTA	21	GRF	1725.0	1750.0	65.0	3.2	1.8		
	2800	OTTA	1	S	1727.5	1728.7	3.0	3.8	1.8		
	2695	PENT	2	S/F	2338.0	2340.5	7.0	3.6	1.6		
	8800	LEAR	4	S/F	2338.8	2340.5	5.0	10.0			QL=6 ST=3 TYP=3
	2695	LEAR	8	S	2339.8	2340.8	1.3	6.0			QL=6 ST=2 TYP=3
08	2800	OTTA	27	RF	1530.0		205.0	2.0	1.7		
	2800	OTTA	24	R	1530.0	1555.0	25.0	2.0	1.5		
	2800	OTTA	24P	R	1555.0		145.0	2.0			
	2800	OTTA	26	FAL	1820.0	1855.0	35.0	-2.0	-1.5		
09	2695	LEAR	4	S/F	0455.1	0456.1	6.0	8.0			QL=6 ST=2 TYP=3
	2800	OTTA	22	GRF	1508.0	1512.0	17.0	2.0	1.0		
	2800	OTTA	1	S	1743.0	1745.0	9.0	1.6	.8		
	2695	PENT	20	GRF	2215.0	2250.0	115.0	1.8	1.0		
10	2800	OTTA	20	GRF	1510.0	1520.0	20.0	1.6	.8		
	2695	PENT	1	S	2005.0	2010.0	10.0	1.2	.6		
	2800	OTTA	21	GRF	2220.0	2230.0	80.0	2.0	1.0		
	2800	OTTA	1	S	2222.0	2222.8	4.0	3.8	1.6		
11	2800	OTTA	20	GRF	1850.0	1900.0	50.0	2.0	1.0		
12	2800	OTTA	22	GRF	1402.0	1405.0	40.0	2.4	1.2		
	8800	SGMR	47	GB	1408.5	1408.8	1.1	239.0			QL=6 ST=2 TYP=5
13	2800	OTTA	27	RF	1210.0		375.0	1.2	1.1		
	2800	OTTA	24	R	1210.0	1225.0	15.0	1.2	.6		
	2800	OTTA	24P	R	1225.0		335.0	1.2			
	2800	OTTA	26	FAL	1800.0	1825.0	25.0	-1.2	-.8		
14	2800	OTTA	20	GRF	1230.0	1238.0	35.0	2.0	1.0		
	2800	OTTA	20	GRF	2020.0	2030.0	40.0	1.6	1.0		
	2800	OTTA	240	R	2105.0	2115.0	10.0	1.6	.8		
17	2695	PENT	20	GRF	2225.0	0015.0	165.0	3.6	1.8		
18	2695	PENT	26	FAL	0010.0	0050.0	40.0	-3.0	-1.5		

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

APRIL 1983

Day	Freq	Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
18	2695	PENT	4 S/F	0121.0	0130.8	30.0D	41.0			
	2800	OTTA	20 GRF	1315.0	1345.0	105.0	2.0	1.0		
	2800	OTTA	240AR	1835.0	1935.0	60.0	3.0			
	2800	OTTA	2 S/F	1916.0	1917.0	2.0	2.0	1.0		
	2800	OTTA	21 GRF	1916.0	1924.0	16.0	2.0	1.0		
	2800	OTTA	27A RF	2130.0		200.0	3.0	2.6		
	2800	OTTA	24 R	2130.0	2147.0	17.0	3.0	1.2		
	2800	OTTA	24P R	2147.0		143.0	3.0			
	2800	OTTA	2 S/F	2148.5	2151.5	4.5	4.4	2.0		
	2800	OTTA	29 PBI	2153.0	2153.0	9.0	2.0	1.4		
19	8400	BERN	3 S	0531.0	0532.0	1.0	22.0			
	8400	BERN	3 S	0820.5	0821.1	1.0	30.0			
	2800	OTTA	20 GRF	1230.0	1300.0	75.0	2.0	1.3		
	2800	OTTA	260 FAL	1425.0	1500.0	35.0	-2.0	-1.0		
	2800	OTTA	20 GRF	1505.0	1605.0	95.0	2.4	1.2		
	2800	OTTA	1 S	2020.0	2021.2	2.2	1.4	.6		
20	2695	PENT	1 S	0010.9	0011.0	1.0	3.4	1.1		
	8800	LEAR	8 S	0018.3	0019.1	1.5	8.0			QL=6 ST=2 TYP=3
	2695	LEAR	8 S	0018.8	0019.6	1.0	15.0			QL=1 ST=2 TYP=3
	2695	PENT	1 S	0033.0	0034.3	2.5	1.8	.8		
	8800	LEAR	4 S/F	0143.3	0144.8	3.0	11.0			QL=6 ST=2 TYP=3
	2695	LEAR	4 S/F	0616.5E	0619.3	6.0D	13.0			QL=6 ST=2 TYP=3
	8800	LEAR	4 S/F	0616.6E	0619.5	5.9D	5.0			QL=6 ST=2 TYP=3
	8800	ATHN	20 GRF	0708.1	0713.1	9.0	16.0			QL=6 ST=3 TYP=2
	2800	OTTA	22 GRF	1140.0	1235.0	90.0	2.6	1.3		
	2695	PENT	1 S	1411.8	1412.0	10.0	9.0	3.0		
	2800	OTTA	20 GRF	1545.0	1550.0	25.0	2.4	1.7		
	2800	OTTA	21 GRF	1720.0	2030.0	250.0	4.6	2.4		
	2800	OTTA	3 S	1724.0	1728.0	7.0	10.6	6.4		
	2800	OTTA	29 PBI	1731.0	1731.0	35.0	4.8	1.8		
	2800	OTTA	1 S	1900.0	1900.5	2.0	2.2	1.0		
	2800	OTTA	1 S	2056.0	2057.0	3.0	1.8	.9		
21	8400	BERN	3 S	0646.5	0647.3	2.0	41.0			
	8800	LEAR	8 S	0646.6	0647.1	1.0	26.0			QL=6 ST=2 TYP=3
	2695	LEAR	4 S/F	0646.8	0647.5	9.5	11.0			QL=6 ST=2 TYP=3
	8400	BERN	3 S	1031.2	1032.0	8.0	39.0			
	8800	SGMR	4 S/F	1031.3	1032.1	2.5	38.0			QL=4 ST=2 TYP=3
	2800	OTTA	1 S	1615.0	1615.8	2.0	2.2	1.1		
	2800	OTTA	22 GRF	1630.0	1636.0	20.0	5.2	2.4		
	2800	OTTA	1 S	1844.0	1845.0	5.0	2.0	.9		
	8800	SGMR	8 S	2033.3	2033.5	.3	21.0			QL=6 ST=2 TYP=3
	2800	OTTA	2 S/F	2055.5	2056.2	3.0	4.4	2.2		
	2800	OTTA	21 GRF	2223.0	2225.0	35.0	2.0	1.2		
	2800	OTTA	1 S	2223.7	2224.0	1.5	3.2	1.4		
22	2695	PENT	1 S	0000.0	0000.5	1.5	8.8	4.0		
	8800	LEAR	47 GB	0002.6	0004.6	9.2	51.0			QL=5 ST=2 TYP=5
	2695	LEAR	47 GB	0002.8	0004.6	9.0	86.0			QL=6 ST=2 TYP=5
	2695	PENT	3 S	0003.5	0004.6	12.5	84.0	16.8		
	8800	PALE	47 GB	0004.3	0004.6	2.3	51.0			QL=6 ST=2 TYP=5
	2695	PENT	29 PBI	0016.0	0016.0	35.0	3.4	1.7		
	2695	PENT	1 S	0104.0	0104.2	1.0	2.6	1.3		
	8800	ATHN	8 S	0532.5	0533.0	1.1	18.0			QL=6 ST=2 TYP=3
	8400	BERN	3 S	0533.5	0533.8	1.0	33.0			
	8800	LEAR	8 S	0533.8	0533.8	.3	19.0			QL=6 ST=2 TYP=3
	2695	LEAR	8 S	0533.8	0534.0	.3	13.0			QL=6 ST=2 TYP=3
	8400	BERN	22 GRF	0907.0	0918.0	30.0	65.0			
	2695	LEAR	4 S/F	0916.8	0918.0	3.8	30.0			QL=6 ST=2 TYP=3
	8800	ATHN	8 S	0917.6	0918.0	1.5	22.0			QL=6 ST=2 TYP=3
	8800	LEAR	8 S	0917.8	0918.0	1.8	28.0			QL=6 ST=2 TYP=3
	2800	OTTA	3 S	1148.0	1148.4	1.0	12.6	4.2		
	2800	OTTA	4 S/F	1559.0	1559.6	2.0	10.0	3.4		
	2800	OTTA	2 S/F	1836.0	1837.3	7.0	5.0	1.8		
	2800	OTTA	1 S	1952.0	1952.3	1.0	1.4	.6		
	2695	PENT	20 GRF	2230.0	2315.0	120.0	3.4			
23	8400	BERN	3 S	0654.0	0659.6	15.0	36.0			
	8800	ATHN	20 GRF	0655.6	0659.5	6.7	13.0			QL=5 ST=2 TYP=2

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

APRIL 1983

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
23	8800	LEAR	4	S/F	0658.0	0659.5	3.1	18.0			QL=6 ST=2 TYP=3
	2695	LEAR	4	S/F	0658.1	0659.5	3.2	23.0			QL=6 ST=2 TYP=3
	8800	LEAR	8	S	0730.8	0731.0	.3	9.0			QL=6 ST=2 TYP=3
	2800	OTTA	20	GRF	1318.0	1335.0	40.0	2.6	1.5		
	2800	OTTA	260	FAL	1430.0	1510.0	40.0	-2.8			
	2800	OTTA	2	S/F	1556.0	1556.5	1.0	1.8			
	2800	OTTA	21	GRF	1735.0	1810.0	50.0	2.2	1.1		
	2800	OTTA	40	F	1750.8	1750.8	.6	10.6			
24	2695	PENT	22	GRF	0123.5	0125.0	12.0	8.8			
	2695	LEAR	4	S/F	0123.6	0128.0	9.7	18.0			QL=6 ST=2 TYP=3
	8800	LEAR	4	S/F	0124.0	0127.0	9.3	23.0			QL=6 ST=2 TYP=3
	8800	PALE	4	S/F	0125.6	0126.8	2.4	33.0			QL=6 ST=2 TYP=3
	8800	PALE	8	S	0130.6	0132.3	2.0	22.0			QL=6 ST=2 TYP=3
	2800	OTTA	20	GRF	1503.0	1508.0	17.0	2.6	1.0		
	2800	OTTA	20	GRF	1805.0	1810.0	20.0	2.0	1.0		
	2800	OTTA	1	S	1911.5	1916.0	4.5D	2.4	.8		
	8800	LEAR	8	S	2340.5	2340.6	.3	11.0			QL=6 ST=2 TYP=3
	2695	LEAR	8	S	2340.6	2340.8	.4	11.0			QL=6 ST=2 TYP=3
25	8800	ATHN	4	S/F	0431.0	0432.3	5.0	8.0			QL=5 ST=2 TYP=3
	2695	LEAR	4	S/F	0431.5	0433.3	8.1	42.0			QL=6 ST=2 TYP=3
	8800	LEAR	4	S/F	0432.0	0433.0	6.1	11.0			QL=6 ST=2 TYP=3
	2695	LEAR	47	GB	0720.5	0720.6	.1	75.0			QL=5 ST=2 TYP=5
	8800	LEAR	47	GB	0720.5	0720.6	.1	84.0			QL=5 ST=2 TYP=5
	8800	ATHN	4	S/F	1312.0	1312.6	4.5	16.0			QL=5 ST=3 TYP=3
	8800	SGMR	4	S/F	1312.5	1312.8	2.1	18.0			QL=6 ST=2 TYP=3
	2800	OTTA	2	S/F	1312.8	1313.0	1.0	2.0			
	2800	OTTA	2	S/F	1532.0	1532.3	1.0	6.8			
	2800	OTTA	23	GRF	1535.0	1615.0	75.0	5.2	2.0		
	2800	OTTA	1	S	1548.0	1550.0	7.0	2.8	1.0		
	2800	OTTA	240	R	1820.0	1840.0	20.0	2.8	1.9		
	2800	OTTA	240	R	1925.0	1940.0	15.0	2.6	1.1		
	2800	OTTA	21	GRF	2138.0	2152.0	30.0	2.8	1.4		
	2800	OTTA	1	S	2139.0	2142.5	6.0	3.8	1.8		
26	8800	LEAR	4	S/F	0311.3	0311.6	9.3	17.0			QL=6 ST=2 TYP=3
	8800	ATHN	4	S/F	0809.3	0811.5	19.0	13.0			QL=5 ST=3 TYP=3
	8400	BERN	21	GRF	0810.0	0811.5	26.0	37.0			
	2695	ATHN	4	S/F	0810.0	0811.6	16.3	28.0			QL=2 ST=3 TYP=3
	8800	LEAR	4	S/F	0811.0	0811.5	6.6	24.0			QL=6 ST=2 TYP=3
	2695	LEAR	4	S/F	0811.0	0811.6	6.6	30.0			QL=6 ST=2 TYP=3
	2695	LEAR	8	S	0829.6	0829.8	.4	11.0			QL=6 ST=2 TYP=3
	8800	LEAR	8	S	0829.6	0829.8	.4	17.0			QL=6 ST=2 TYP=3
	2800	OTTA	1	S	1140.0	1142.0	4.0	2.0	1.0		
	2800	OTTA	20	GRF	1755.0	1810.0	50.0	2.4	1.2		
	8800	LEAR	4	S/F	2335.6	2337.6	3.2	47.0			QL=6 ST=2 TYP=3
	2695	PENT	3	S	2336.0	2337.7	4.0	82.0	20.4		
	2695	LEAR	47	GB	2336.5	2337.6	3.3	93.0			QL=6 ST=2 TYP=5
	8800	PALE	8	S	2337.5	2337.6	.3	25.0			QL=6 ST=2 TYP=3
	8800	LEAR	4	S/F	2359.6	0001.1	2.5	13.0			QL=5 ST=2 TYP=3
27	2695	LEAR	8	S	0000.8	0001.1	1.3	9.0			QL=6 ST=3 TYP=3
	2695	PENT	8	S	0014.0	0014.1	.5	8.2	3.0		
	2695	LEAR	47	GB	0252.3	0254.1	9.3	78.0			QL=6 ST=2 TYP=5
	8800	LEAR	47	GB	0253.1	0254.8	9.0	160.0			QL=6 ST=2 TYP=5
	8800	PALE	47	GB	0254.3	0254.8	2.3	83.0			QL=6 ST=2 TYP=5
	2800	OTTA	4	S/F	1349.0	1349.5	2.0	10.4	4.0		
	8800	ATHN	47	GB	1349.3	1355.3	10.0	50.0			QL=6 ST=2 TYP=5
	2695	ATHN	4	S/F	1349.3	1356.1	10.8	41.0			QL=2 ST=2 TYP=3
	8400	BERN	45	C	1349.5	1355.3	14.0	61.0			
	2800	OTTA	46F	C	1354.0	1356.0	6.0	45.0	20.8		
	2800	OTTA	31	ABS	1400.0	1435.0	70.0	-3.2	-1.6		
	2800	OTTA	20	GRF	1705.0	1720.0	40.0	2.8	1.4		
	2800	OTTA	20	GRF	1748.0	1810.0	70.0	2.8	1.4		
	2800	OTTA	20	GRF	2105.0	2125.0	40.0	2.8	1.4		
	2695	PENT	20	GRF	2205.0	2350.0	230.0D	11.0			
28	2695	ATHN	47	GB	1048.0	1049.1	5.3	340.0			QL=2 ST=3 TYP=5
	2695	SGMR	47	GB	1048.3	1048.8	3.8	360.0			QL=4 ST=1 TYP=5
	8800	ATHN	47	GB	1048.3	1049.6	5.0	119.0			QL=2 ST=3 TYP=5

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

APRIL 1983

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
28	8400	BERN	4	S/F	1048.4	1049.6	120.0D	152.0			
	8800	SGMR	47	GB	1048.5	1049.6	9.1	119.0			QL=4 ST=1 TYP=5
	2800	OTTA	21	GRF	1120.0E	1255.0	520.0D	27.6			
	2800	OTTA	1	S	1139.0	1140.5	4.0	5.6	1.9		
	2800	OTTA	20	GRF	1540.0	1545.0	40.0	5.6	2.8		
	2800	OTTA	22	GRF	1830.0	1840.0	55.0	8.4	3.0		
	2800	OTTA	22	GRF	2115.0	2118.0	15.0	2.2	1.0		
	2800	OTTA	21	GRF	2200.0	2220.0	160.0	4.8	2.0		
	2800	OTTA	40	F	2207.0	2207.0	1.8	9.4			
29	2800	OTTA	20	GRF	1428.0	1430.0	20.0	2.2	1.0		
	2695	SGMR	4	S/F	1439.3	1440.3	22.7	28.0			QL=6 ST=2 TYP=3
	2695	SGMR	20	GRF	1502.0	1504.1	29.1	42.0			QL=6 ST=2 TYP=2
	2800	OTTA	20	GRF	1800.0	1830.0	70.0	2.2	1.1		
	2800	OTTA	20	GRF	2015.0	2018.0	40.0	2.8	1.4		
30	2695	LEAR	8	S	0757.6	0757.8	2.0	7.0			QL=6 ST=2 TYP=3
	8800	LEAR	8	S	0757.6	0757.8	1.7	10.0			QL=6 ST=2 TYP=3
	2695	ATHN	47	GB	0802.5	0809.3	57.5	100.0			QL=6 ST=3 TYP=5
	2695	LEAR	47	GB	0802.6	0806.0	13.5	44.0			QL=6 ST=2 TYP=5
	8800	ATHN	4	S/F	0803.6	0815.3	56.4	51.0			QL=6 ST=3 TYP=3
	8800	LEAR	8	S	0803.8	0804.3	.8	17.0			QL=6 ST=2 TYP=3
	8400	BERN	45	C	0805.0	0815.2	120.0D	90.0			
	2800	OTTA	20	GRF	1940.0	1945.0	40.0	2.4	1.2		

Observatories:

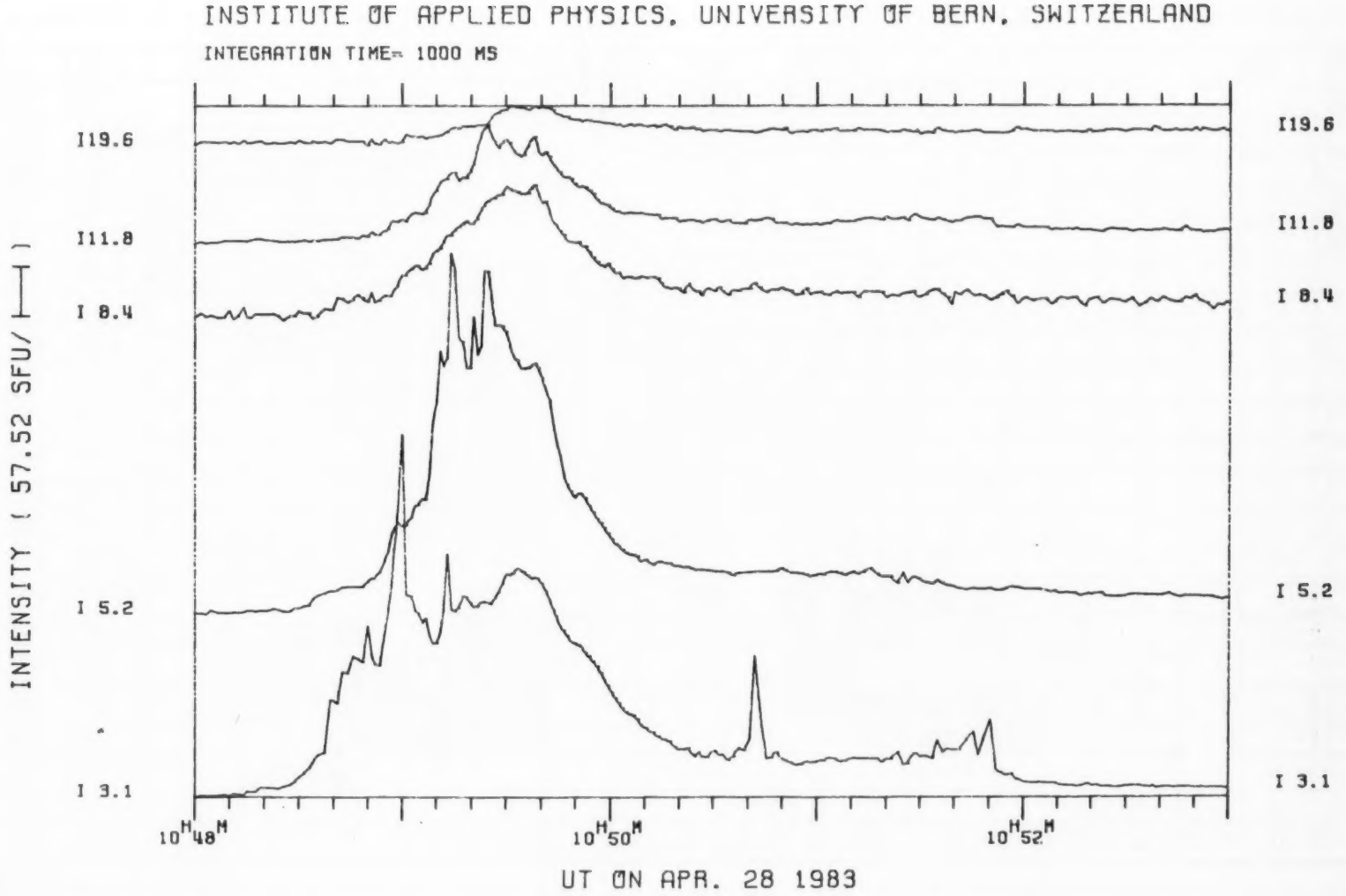
BERN = Berne MANI = Manila OTTA = Ottawa ARO PENT = Penticton SGMR = Sagamore Hill
LEAR = Learmonth ATHN = Athens PALE = Palehua

Explanation of Type Code:

1 Simple 1	7 Minor +	24 Rise	30 Post Burst Increase A	43 Onset on Noise Storm
2 Simple 1F	8 Spike	25 Rise A	31 Post Burst Decrease	44 Noise Storm In Progress
3 Simple 2	20 Simple 3	26 Fall	32 Absorption	45 Complex
4 Simple 2F	21 Simple 3A	27 Rise and Fall	40 Fluctuation	46 Complex F
5 Simple	22 Simple 3F	28 Precursor	41 Group of Bursts	47 Great Burstise Storm
6 Minor	23 Simple 3AF	29 Post Burst Increase	42 Series of Bursts	48 Major
				49 Major +

Remarks:

QL = Quality (1=poor to 6=excellent)
ST = Status (1=real time; 2=final; 3=correction; 4=deletion)
TYP= Type (1=noise storm;2=rise in base level;3=minor;4=group;5=major;6=major plus;7=Castelli U-type burst)


INSTITUTE OF APPLIED PHYSICS, UNIVERSITY OF BERN, SWITZERLAND
INTEGRATION TIME= 1000 MS
I19.6
I11.8
I 8.4
I 5.2
I 3.1
INTENSITY (57.52 SFU/)
10H48M
10H50M
10H52M
UT ON APR. 28 1983

INFERRED IP MAGNETIC FIELD

BARTELS ROTATION	DATE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
2025	SEP 22	-	-	-	-	-	-	-	AT -	TA -	-	-	-	TA -	-	TA -	TA -	TA -	-	AT -	-	TA -	AT -	TA -	AT -	TA -	TA -	TA -
2026	OCT 19	AT -	TA -	TA -	-	-	-	-	TA -	TA -	-	TA -	-	-	-	-	TA -	-	-	-	-	-	AT -	TA -	-	-	-	-
2027	NOV 15	-	-	-	AT -	AT -	-	-	-	-	AT -	-	-	-	-	-	TA -	-	TA -	TA -	AT -	-	-	-	-	-	AT -	-
2028	DEC 12	TA -	-	-	-	AT -	AT -	-	-	AT -	TA -	-	-	-	-	-	-	AT -	-	AT -	TA -	-	-	-	-	TA -	-	- -
2029	1982 JAN 8	-	-	-	-	-	TA -	TA -	-	-	-	-	-	-	TA -	-	-	TA -	-	-	-	AT -	-	-	-	AT -	-	-
2030	FEB 4	-	-	-	TA -	TA -	TA -	TA -	-	-	TA -	-	-	-	-	-	TA -	-	-	-	-	-	-	-	TA -	-	-	TA -
2031	MAR 3	-	-	-	-	-	TA -	TA -	-	TA -	TA -	-	TA -	-	-	TA -	-	-	-	TA -	TA -	-	-	-	-	-	-	AT -
2032	MAR 30	-	TA -	-	TA -	-	-	-	-	-	-	TA -	-	-	-	-	-	AT -	TA -	-	TA -	-	-	-	-	-	-	-
2033	APR 26	- -	AT -	-	-	-	-	-	TA -	TA -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	AT -	AT -	-
2034	MAY 23	-	-	-	AT -	- -	TA -	-	-	-	-	- -	AT -	-	-	-	-	-	-	-	-	-	-	-	- -	- -	-	TA -
2035	JUN 19	-	-	-	-	-	-	-	-	- -	-	-	-	TA -	-	-	-	-	-	-	-	-	-	TA -	-	-	-	-
2036	JUL 16	-	- -	-	- -	- -	TA -	-	-	-	-	AT -	-	-	-	AT -	-	-	-	-	-	-	-	-	-	-	-	-
2037	AUG 12	-	-	-	- -	-	-	- -	-	TA -	-	- -	TA -	TA -	TA -	-	-	-	TA -	-	TA -	-	-	-	-	-	-	-
2038	SEP 8	TA -	AT -	-	-	-	-	-	-	-	-	-	-	-	TA -	-	AT -	-	-	-	-	-	TA -	-	-	-	-	-
2039	OCT 5	-	AT -	-	-	AT -	-	-	-	-	AT -	TA -	-	-	-	-	AT -	-	-	-	-	-	-	-	TA -	-	-	-
2040	NOV 1	AT -	-	-	-	-	AT -	-	-	-	AT -	-	-	-	-	AT -	-	-	TA -	-	-	-	-	-	TA -	AT -	-	-
2041	NOV 28	TA -	-	- -	- -	- -	AT -	-	-	-	-	-	-	TA -	TA -	-	-	-	-	-	-	-	AT -	AT -	-	-	-	-
2042	DEC 25	-	-	AT -	AT -	-	-	-	TA -	-	-	-	-	-	-	-	-	-	TA -	TA -	-	-	-	AT -	-	-	-	-
2043	1983 JAN 21	- -	-	-	-	-	-	-	-	-	TA -	-	-	-	-	TA -	AT -	-	-	-	-	-	-	-	- -	-	-	-
2044	FEB 17	-	-	-	-	-	-	-	-	-	-	TA -	-	-	TA -	-	TA -	TA -	-	AT -	TA -	TA -	-	TA -	-	-	-	-
2045	MAR 16	- -	- -	AT -	AT -	AT -	-	-	-	-	-	AT -	- -	-	-	-	AT -	-	TA -	-	-	-	-	-	-	-	- -	-
2046	APR 12	-	- -	TA -	- -	-	-	- -	-	-	-	-	-	TA -	-	-	-	AT -	TA -	AT -								

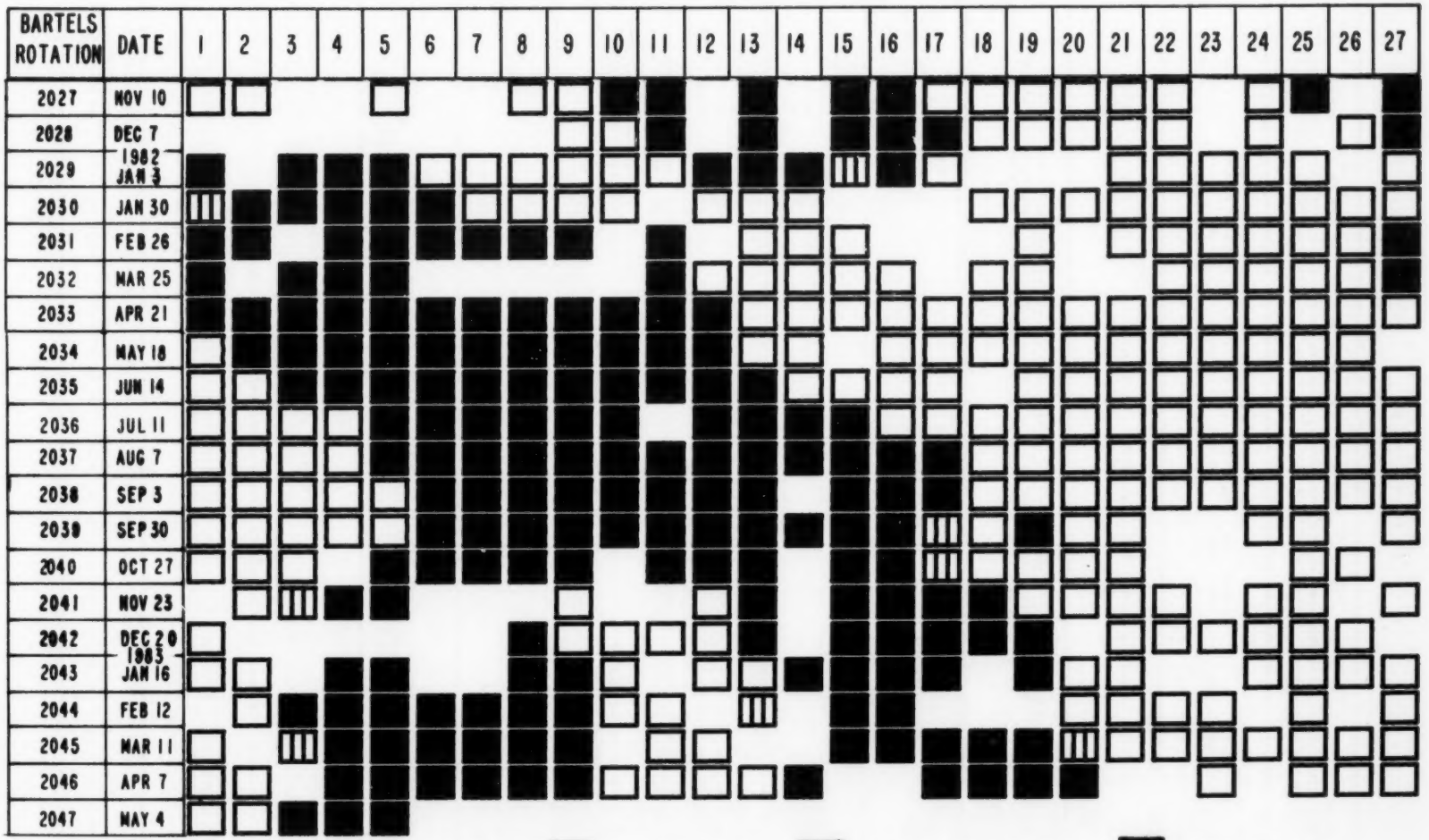
[T] = definitely towards the sun [ ] = definitely away from the sun

T = towards the sun A = away from the sun * = effect doubtful or not discernible - = missing data

The table shows daily inferences of the polarity of the interplanetary magnetic field. The first half of the day is based principally on magnetograms produced by the magnetometer at the Vostok Antarctic Station of the USSR. The magnetometer of the U.S. Air Weather Service now operated at Thule by the Danish Meteorological Institute is used for the second half of the day. The Thule magnetometer ceased operating in August 1981.

based principally on magnetograms produced by the magnetometer at the Vostok Antarctic Station of the USSR. The magnetometer of the U.S. Air Weather Service now operated at Thule by the Danish Meteorological Institute is used for the second half of the day. The Thule magnetometer ceased operating in August 1981.

STANFORD MEAN SOLAR MAGNETIC FIELD



POLARITY OF THE MEAN SOLAR MAGNETIC FIELD: □ = FIELD >2μT, ▥ = -2μT ≤FIELD ≤2μT, ■ = FIELD <-2μT

No box visible indicates no data available for that day.

NOTE: Data are taken daily at 2000 UT. Dates given are not Bartels Rotation dates. These earlier dates correspond to the occurrence of phenomena on the Sun that affect the Earth during the given Bartels Rotation.

STANFORD MEAN SOLAR MAGNETIC FIELD (MICROTESLA)

	1932								1933			
day	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April
01	-6	.	.	49	89	22	-31	42	-9	-81	.	25
02	-6	33	85	19	102	53	-15	.	.	.	.	33
03	23	38	75	19	84	37	-18	.	-39	-3	11	52
04	43	54	71	52	66	18	-38	10	-81	15	33	61
05	48	30	53	85	63	-6	.	-42	-73	45	38	63
06	16	32	35	105	55	-41	-63	.	-22	.	51	50
07	41	77	29	81	30	-54	-61	-90	-2	.	.	29
08	69	80	42	63	-27	-76	-63	-64	.	54	65	21
09	74	68	54	59	-55	-90	.	-29	53	84	.	.
10	70	54	63	33	-74	-93	-54	-20	46	93	48	-15
11	65	50	87	-30	-93	-96	-21	26	37	69	30	-44
12	79	58	79	-87	-124	-100	1	29	53	.	.	-48
13	87	.	43	-118	-125	-70	19	43	84	16	2	-43
14	77	78	9	-121	-120	-35	34	28	84	-19	-25	-29
15	72	51	-39	-144	-112	-7	37	.	.	-22	-44	-11
16	51	-13	-112	-149	.	-1	52	8	39	-104	-62	9
17	38	-51	-164	-141	-49	4	.	57	10	-102	-27	16
18	27	-93	-193	-124	-28	-43	.	.	.	-67	-19	13
19	-15	-184	-201	-93	-14	55	.	64	-87	-37	-5	15
20	-57	-237	-189	-59	12	33	22	32	-119	-7	.	-11
21	-63	-225	.	-32	40	.	33	.	.	24	19	.
22	-93	-170	-128	-16	44	.	.	.	.	27	15	.
23	-132	-123	-71	-12	26	17	.	.	-25	.	.	-66
24	-158	-69	-29	5	10	45	12	.	-3	-1	.	-59
25	-151	-56	-5	32	8	.	-1	.	31	.	-23	-34
26	-118	-40	12	39	18	54	-31	.	.	-49	-34	-15
27	-26	11	28	47	36	55	-58	-31	31	-66	-42	.
28	-26	37	38	46	72	34	.	6	3	.	-17	.
29	-10	46	48	25	57	20	.	42	-14		-20	36
30	19	59	61	39	52	.	.	59	-51		1	.
31	46		53	64		-11		35	-91		18	

BOULDER GEOMAGNETIC SUBSTORM LOG

April 1983

DATE	ONSET TIME	DIR	COMMENTS
04/01			Field intermittently active.
	0335	East	
	0620	Center	
	0955	West	
	1215	West	Several injections with recovery near 1630 UT.
04/02			Field intermittently unsettled.
	0540	East	
	1040	West	
04/03			Field intermittently unsettled.
	0355	East	
	0700	West	Weak substorm.
	1205	West	
04/04			Field intermittently unsettled.
	0420	East	
	1030		Localized substorm College to Anchorage.
	1055	West	
	1610		Localized substorm vicinity Norman Wells.
04/05			Field intermittently unsettled.
	0110	East	Boulder in partial ring current sector.
04/06			Field intermittently active.
	0440	East	
	0805	West	Initial onset at College, several injections with recovery near 1100 UT.
	1130		Localized substorm College to Anchorage.
	1330	West	
04/07			Field unsettled all day.
	1045	West	Moderate substorm.
	1445		Localized suostorm vicinity College.
04/08			Field unsettled all day.
	0705	East	Weak substorm.
	0805		Localized substorm Cape Parry to Sachs Harbour.
	0835		Localized substorm Cape Parry to Sachs Harbour.
	1050	West	Weak substorm.
	1525	West	Weak substorm.
04/09			Field unsettled all day.
	0525	East	
	1230	West	Moderate substorm.
	1605	West	Weak substorm.
04/10			Field unsettled all day.
	0155	East	Boulder in partial ring current sector.
	0520	Center	
	0740	West	
	1125	West	Weak substorm.
04/11			Field intermittently unsettled.
	0500	East	Weak substorm.
	0715	West	Weak substorm.
	0810	West	Weak substorm.
04/12			Field unsettled all day.
	0855	West	
04/13			Field unsettled all day.
	0415	East	
	0510	East	
	1100	SSC	
	1150	West	
	1330		Localized substorm College to Anchorage.
04/14			Field unsettled with strong active conditions 0700-1800 UT. Substorm activity varied temporarily and spacially during active period.
04/15			Field active through 1930 UT.
	0345		Weak substorm.
	0620	West	
	0710	West	
	1020		Localized substorm vicinity College.
04/15	1350	West	Numerous injections with recovery near 1930 UT.
	2315	East	Boulder in partial ring current sector.
04/16			Field intermittently active.
	0220	East	
	0540	West	Weak substorm.
	1020	West	Initial onset at College, numerous injections with recovery near 1730 UT.
04/17			Field unsettled all day.
	0740	West	
	1535	West	Slow onset.
04/18			Field unsettled all day.
	0405	East	Weak substorm.
	0435	East	Weak substorm.
	1140		Localized substorm vicinity College.
	1510		Weak substorm.
04/19			Field active 0800-1800 UT.
	0515	East	Weak substorm.
	0815	West	Weak substorm.
	0900	West	
04/20			Field unsettled all day.
	0105	East	Weak substorm.
	0750	West	Weak substorm.
	1305	West	Several injections with recovery near 1530 UT.
04/21			Field unsettled all day with no significant substorm activity.
04/22			Field unsettled through 1100 UT.
	0655		Localized substorm vicinity Narsarssuaq, Greenland.*
	0820	East	Initial onset at Lynn Lake.
	0910	West	
04/23			Field intermittently unsettled.
	0235	East	Weak substorm.
	0835	West	Weak substorm.
	1115	West	Weak substorm, several injections.
	2045		Moderate bays, H component at Sachs Harbor and Cape Parry.
	2145		Moderate bays, H component at Sachs Harbor and Cape Parry, and all mid/low latitude stations.
04/24			Field active to storm level all day.
04/25			Field slightly active all day with numerous minor injections.
	0955		Moderate substorm College to Anchorage.
04/26			Field unsettled all day.
	0330	East	Weak substorm.
	0525	Center	Strongest response Lynn Lake to Ft. Smith.
	1220		Initial onset at College, numerous injections with recovery near 1700 UT. Response confined to oval stations.
04/27			Field unsettled through 1700 UT.
	0055	East	
	0400	East	Initial onset at Lynn Lake, several injections with recovery near 0545 UT.
04/28			Field intermittently unsettled.
	0210	East	Weak substorm, several injections.
	1200	West	Weak substorm.
04/29			Field intermittently active with storm level 1200-2030 UT.
04/30			Field intermittently active.
	0455	East	

* Note: This station became operational on 19 April 1983. For convenience, it will be identified by the call letters NAQ.

SGD 465 Part I (Prompt)

MARCH 1983 DATA

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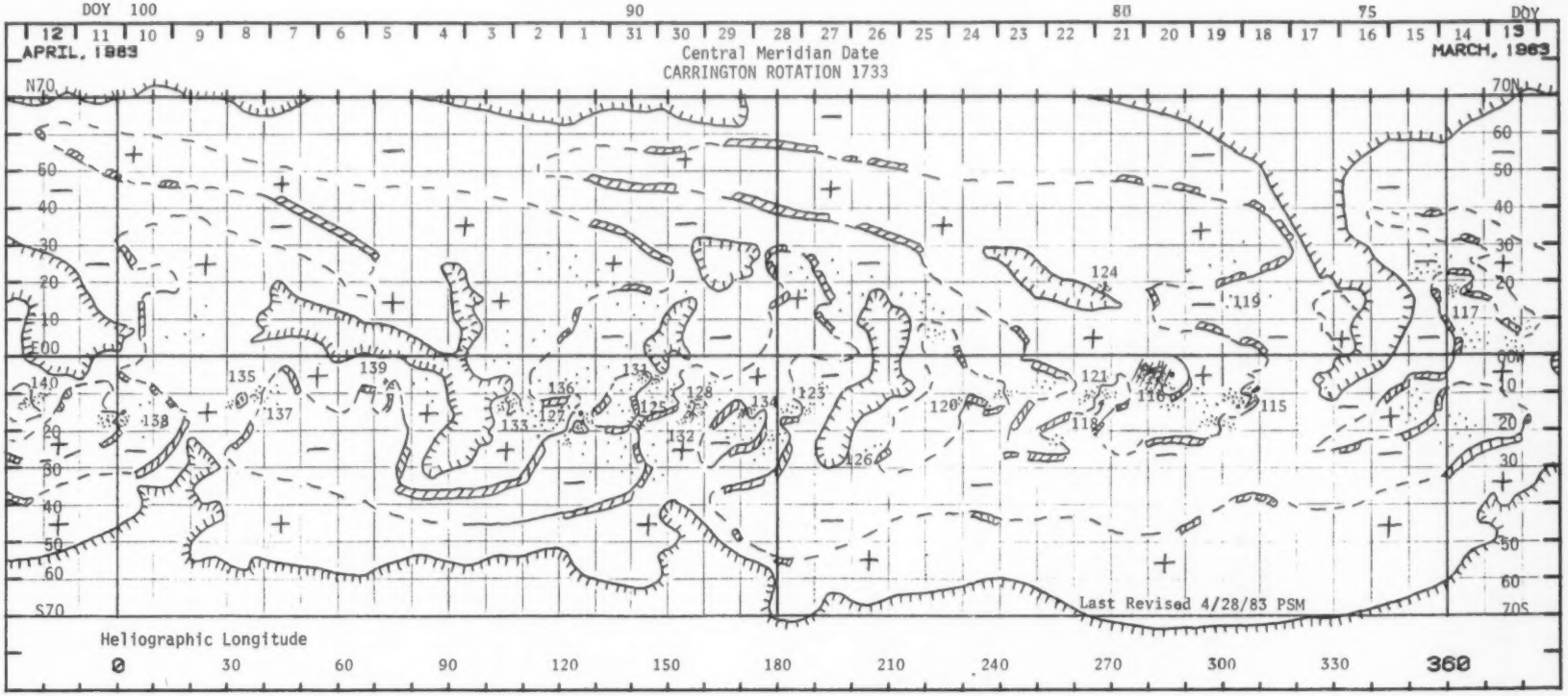
Hα SYNOPTIC CHART

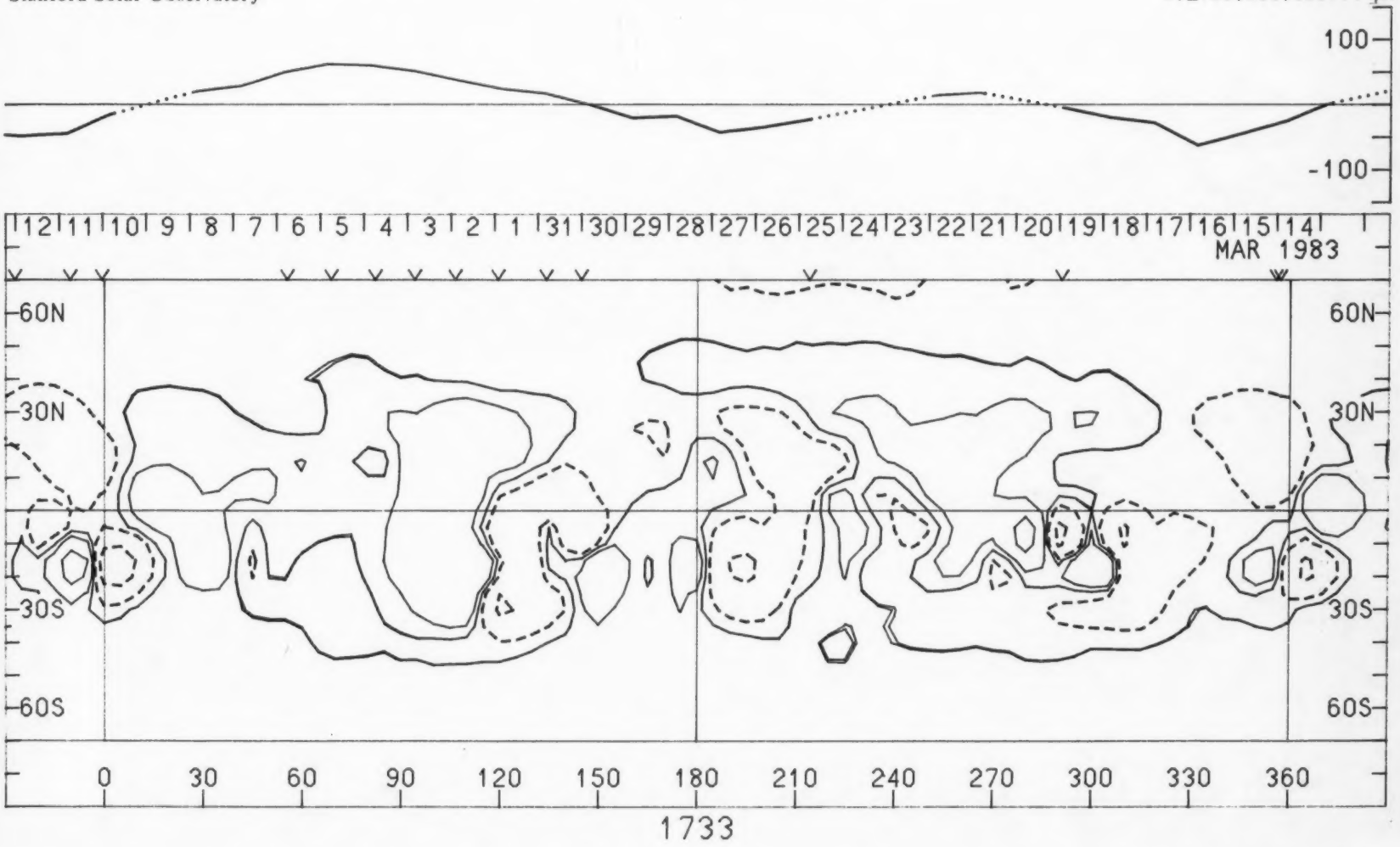
CARRINGTON ROTATION 1733 (PRELIMINARY)



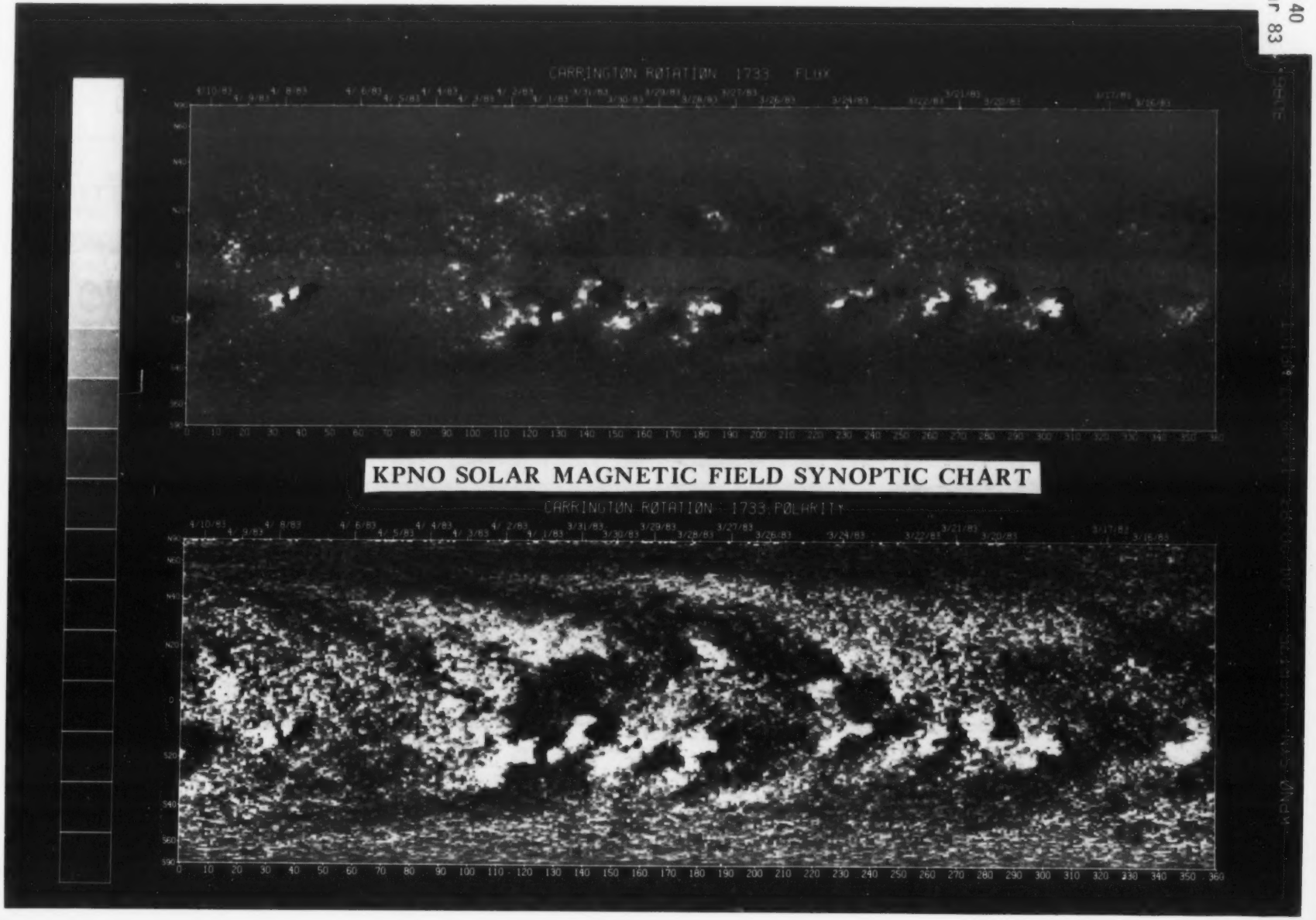
SOLAR MAGNETIC FIELD SYNOPTIC CHART

CARRINGTON ROTATION 1733

Stanford Solar Observatory



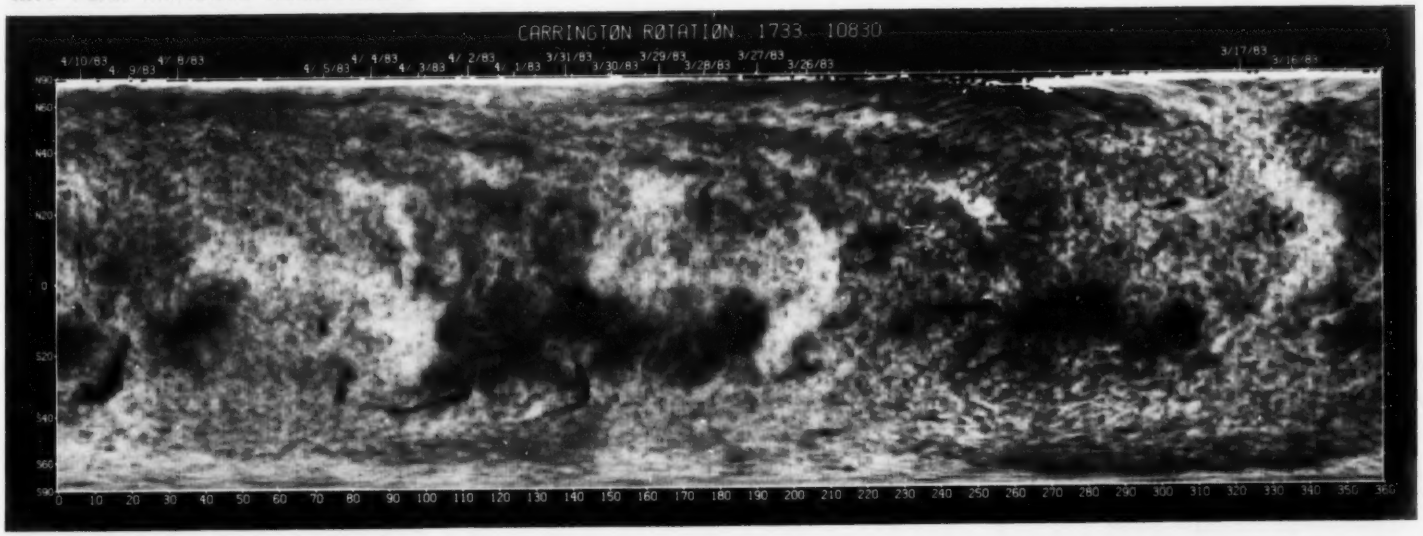
39
Mar 83



KPNO SOLAR MAGNETIC FIELD SYNOPTIC CHART

HELIUM 10830Å SYNOPTIC MAPS
CARRINGTON ROTATION 1733

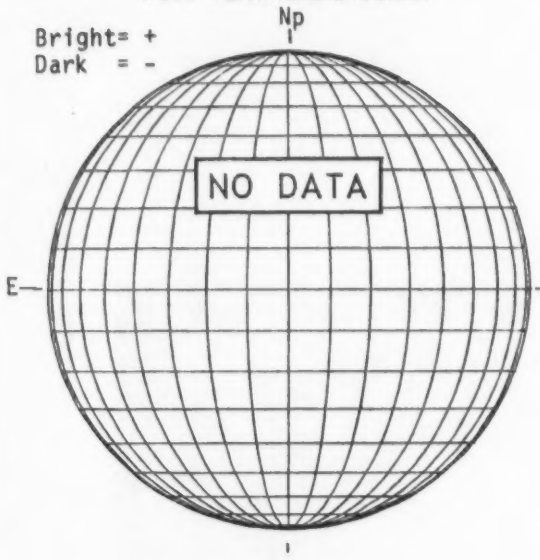
KITT PEAK NATIONAL OBSERVATORY



M A R C H 01, 1 9 8 3 (P=-21.42, B_o=-7.21, L_o= 182.41)

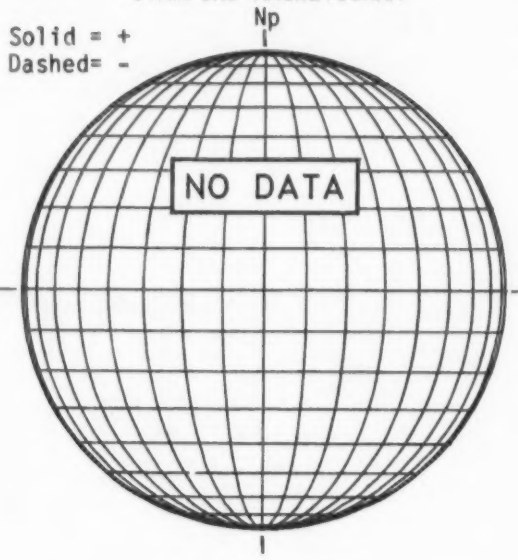
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



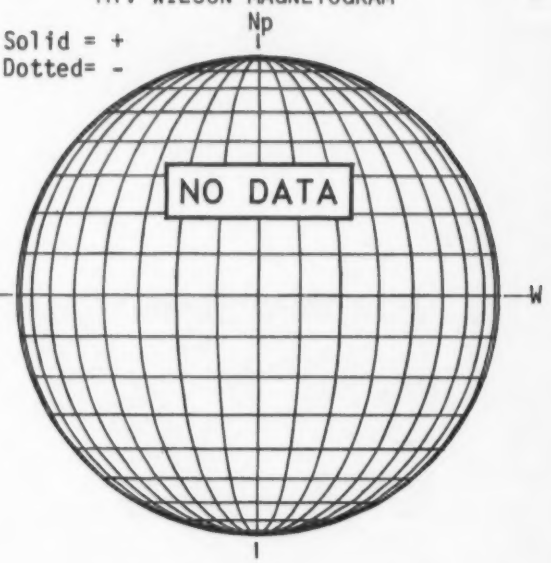
STANFORD MAGNETOGRAM

Solid = +
Dashed= -

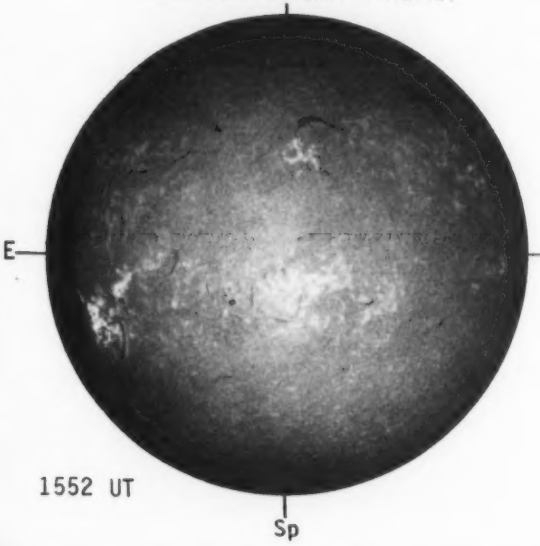


MT. WILSON MAGNETOGRAM

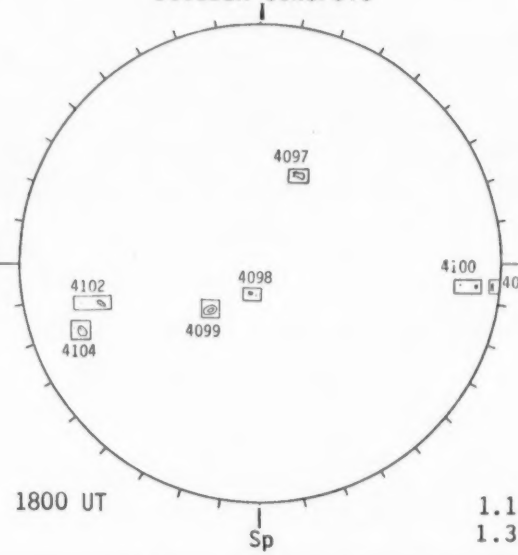
Solid = +
Dotted= -



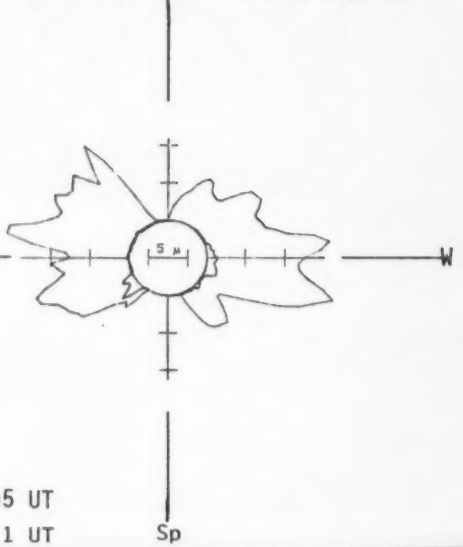
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (5303 Angstrom)



M A R C H 02, 1 9 8 3 (P=-21.68, B_o=-7.23, L_o= 169.24)

KITT PEAK MAGNETOGRAM

STANFORD MAGNETOGRAM

MT. WILSON MAGNETOGRAM

Sp

Sp

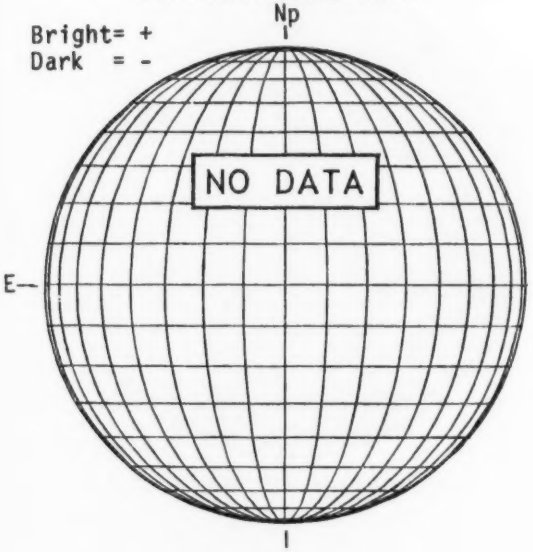
1.15 R_o 1805 UT
1.35 R_o 1811 UT

Sp

M A R C H 02, 1 9 8 3 (P=-21.68, B_o=-7.23, L_o= 169.24)

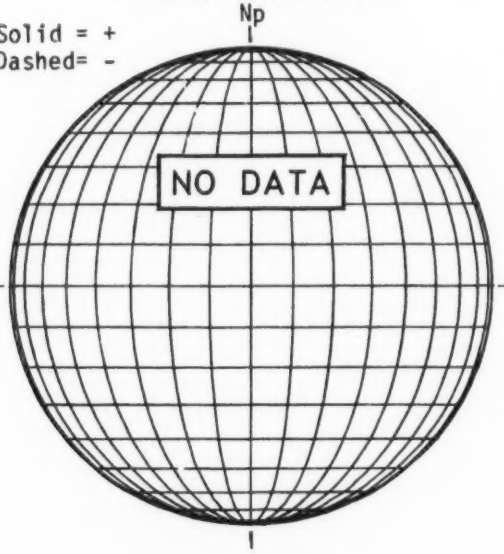
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



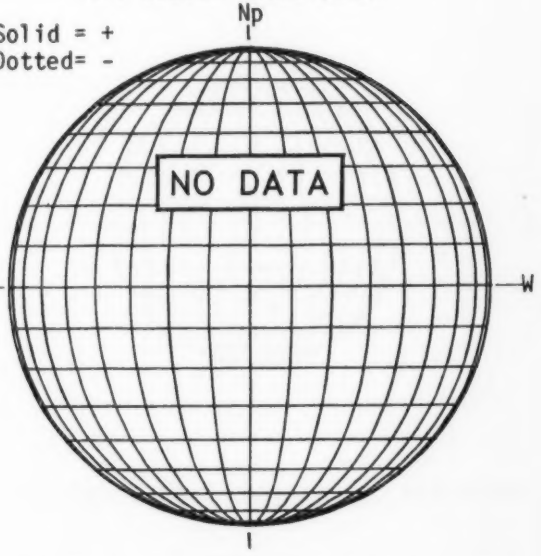
STANFORD MAGNETOGRAM

Solid = +
Dashed= -

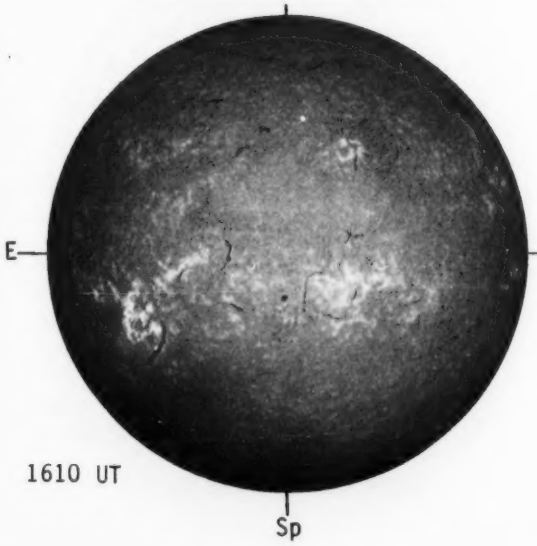


MT. WILSON MAGNETOGRAM

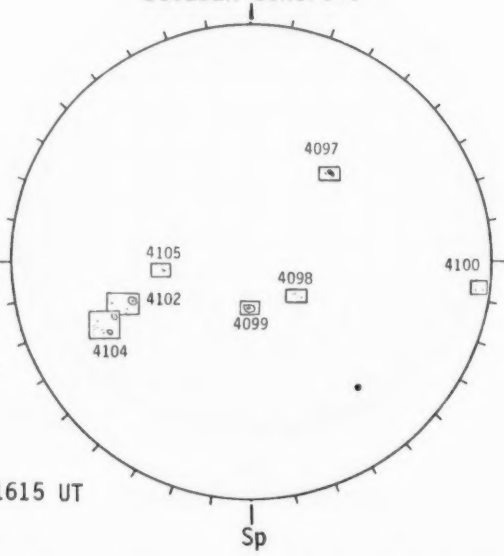
Solid = +
Dotted= -



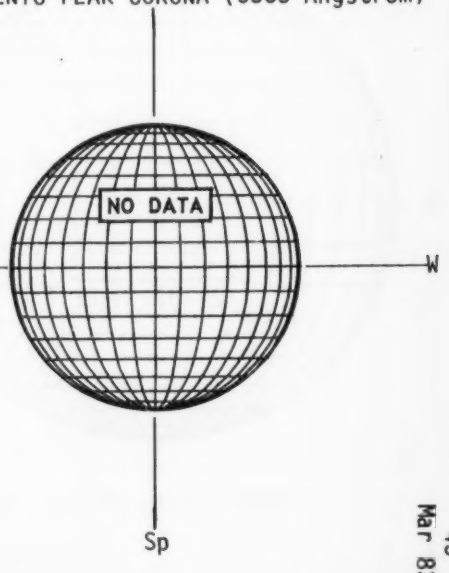
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (5303 Angstrom)



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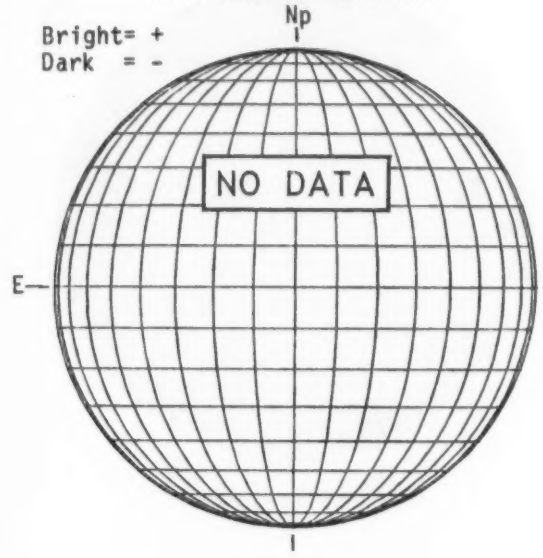
Mar 83

M A R C H 03, 1 9 8 3 (P=-21.92, B_o=-7.23, L_o= 156.06)

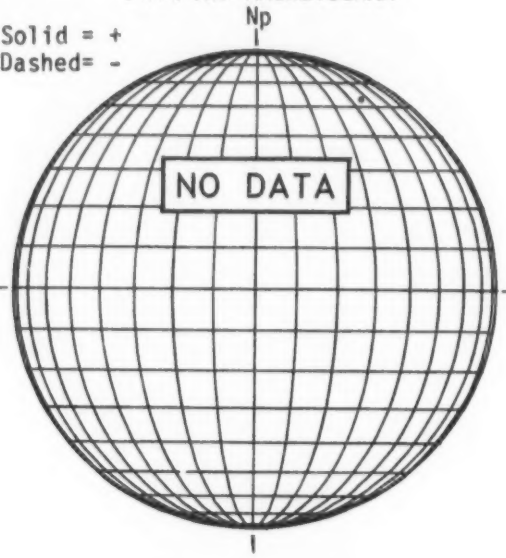
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



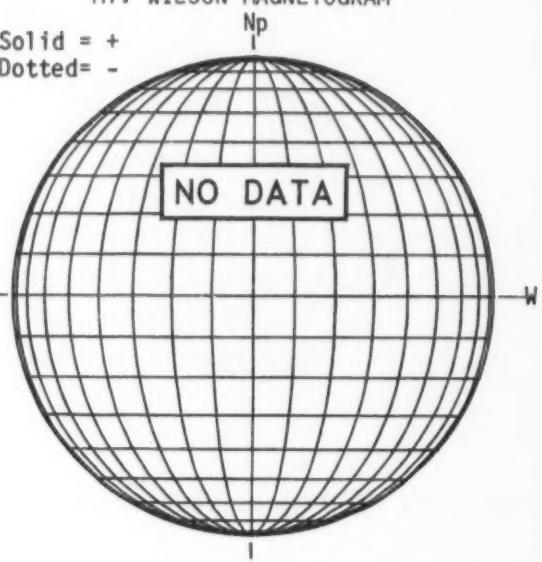
STANFORD MAGNETOGRAM

Solid = +
Dashed= -

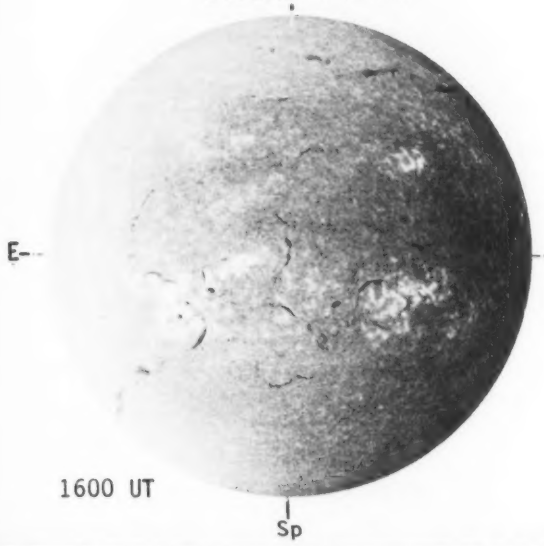


MT. WILSON MAGNETOGRAM

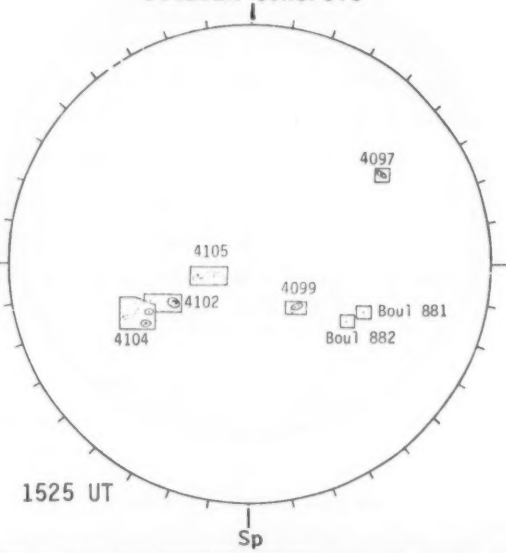
Solid = +
Dotted= -



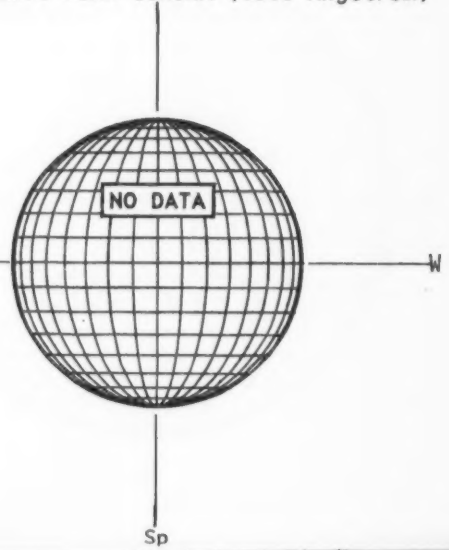
BOULDER H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (5303 Angstrom)



M A R C H 04, 1 9 8 3 (P=-22.16, B_o=-7.24, L_o= 142.89)

KITT PEAK MAGNETOGRAM

STANFORD MAGNETOGRAM

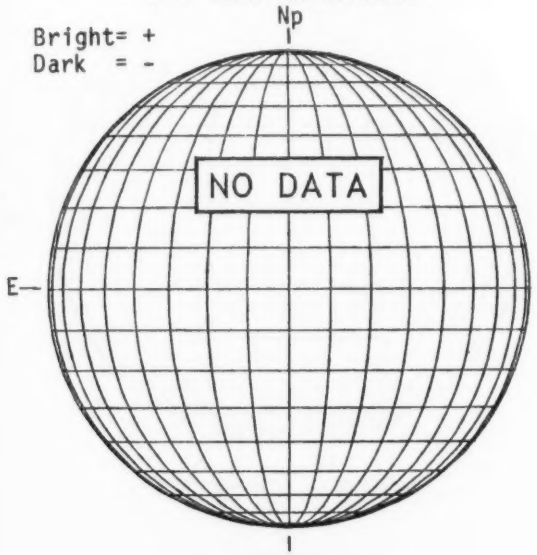
MT. WILSON MAGNETOGRAM

Sp Sp Sp

M A R C H 04, 1 9 8 3 (P=-22.16, B_o=-7.24, L_o= 142.89)

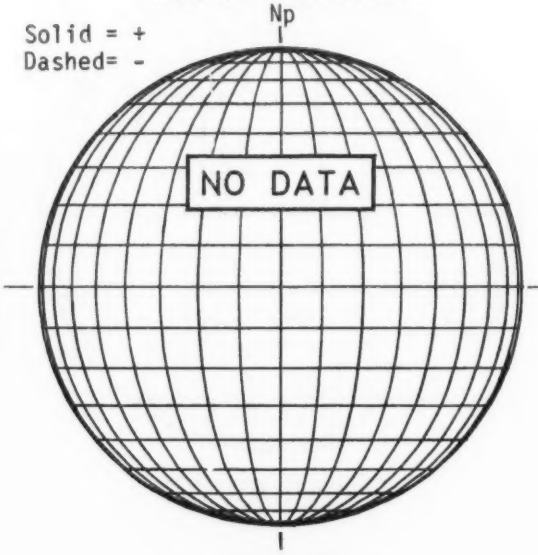
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



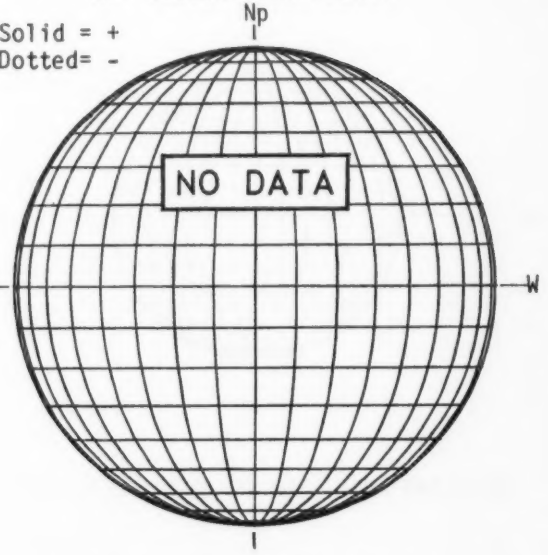
STANFORD MAGNETOGRAM

Solid = +
Dashed= -

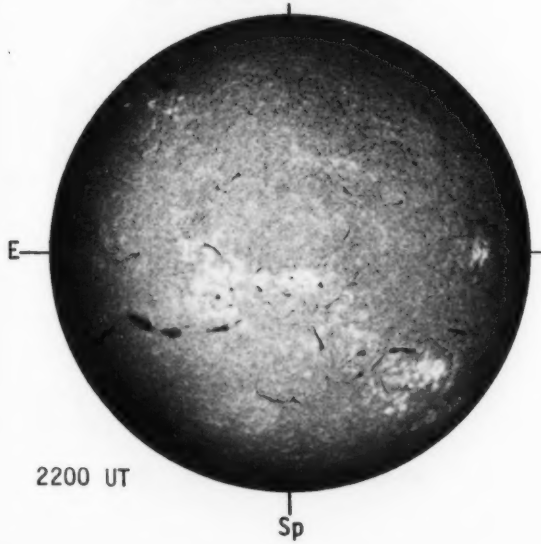


MT. WILSON MAGNETOGRAM

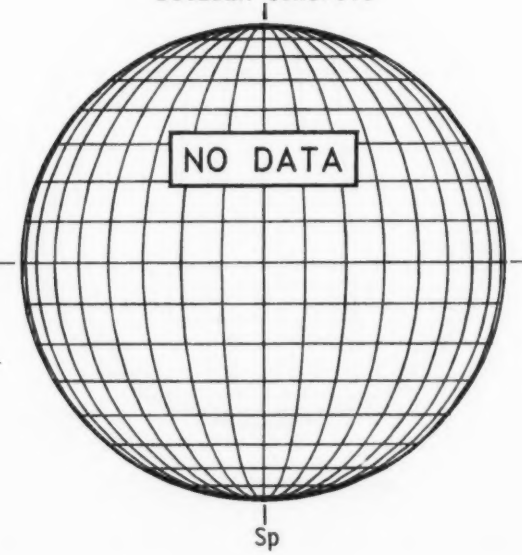
Solid = +
Dotted= -



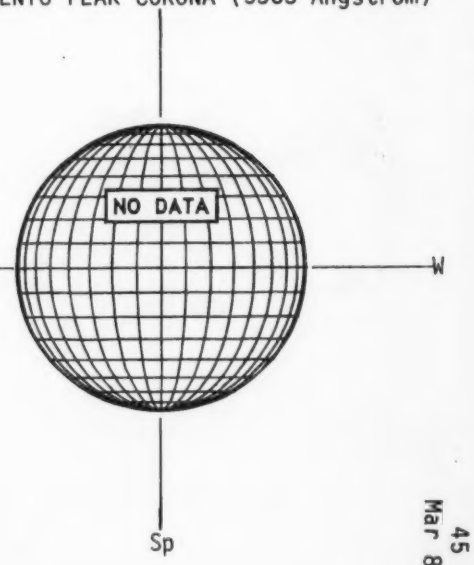
SAN FERNANDO H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (5303 Angstrom)

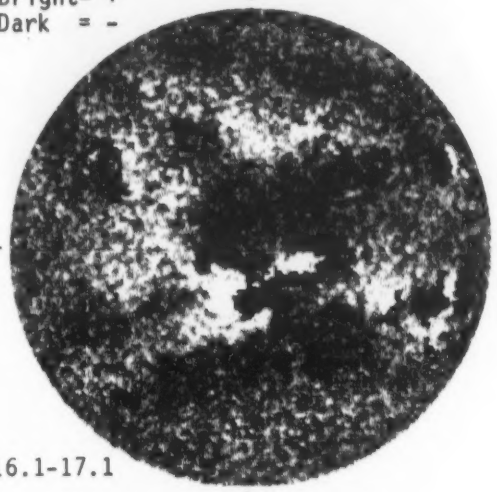


M A R C H 05, 1 9 8 3 (P=-22.40, B_o=-7.25, L_o= 129.72)

MT. WILSON MAGNETOGRAM

Np

Bright= +
Dark = -



E—

16.1-17.1

Sp

STANFORD MAGNETOGRAM

Np

Solid = +
Dashed= -

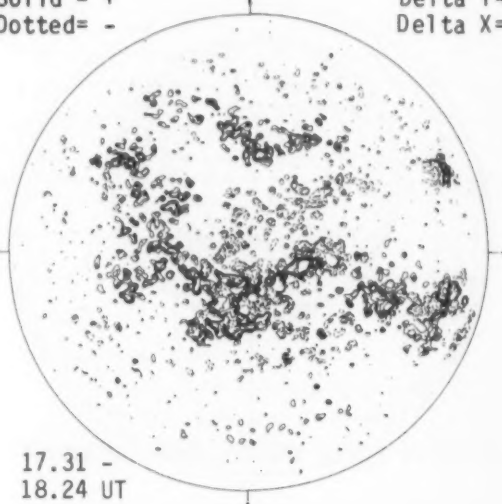
Sp

MT. WILSON MAGNETOGRAM

Np

Solid = +
Dotted= -

Delta Y=12.7
Delta X= 9.6



—W

17.31 -
18.24 UT

Sp

SACRAMENTO PEAK H-ALPHA

E—

Sp

BOULDER SUNSPOTS

Sp

SACRAMENTO PEAK CORONA (5303 Angstrom)

—W

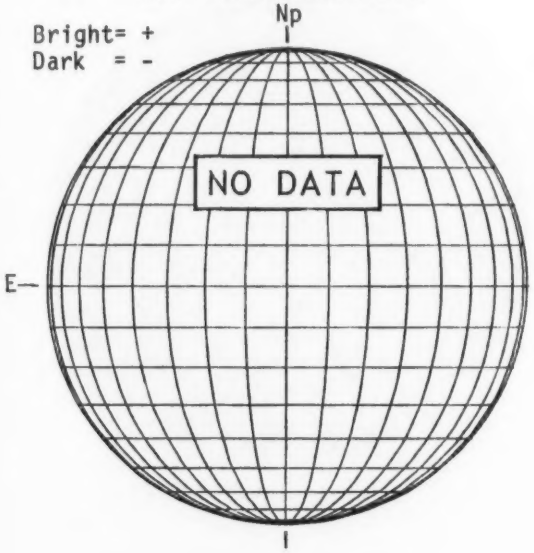
Sp

M A R C H 06, 1 9 8 3 (P=-22.62, B_o=-7.25, L_o= 116.54)

M A R C H 06, 1 9 8 3 (P=-22.62, B_o=-7.25, L_o= 116.54)

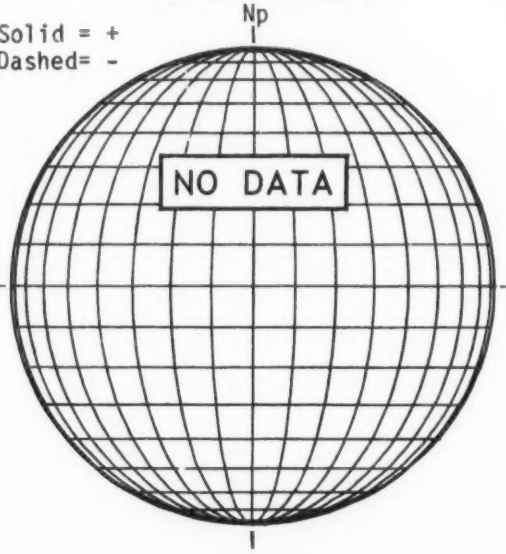
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



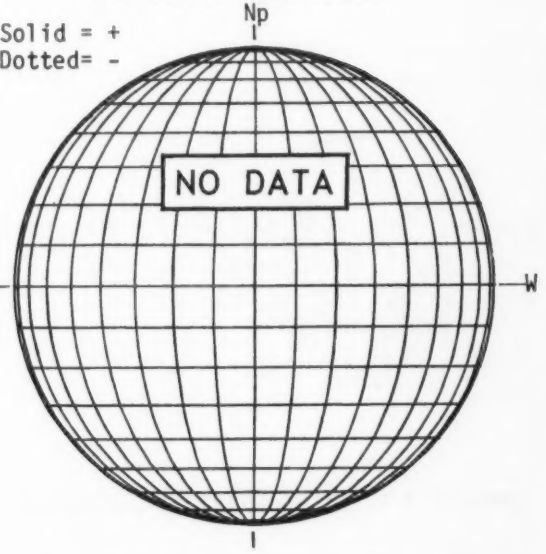
STANFORD MAGNETOGRAM

Solid = +
Dashed= -

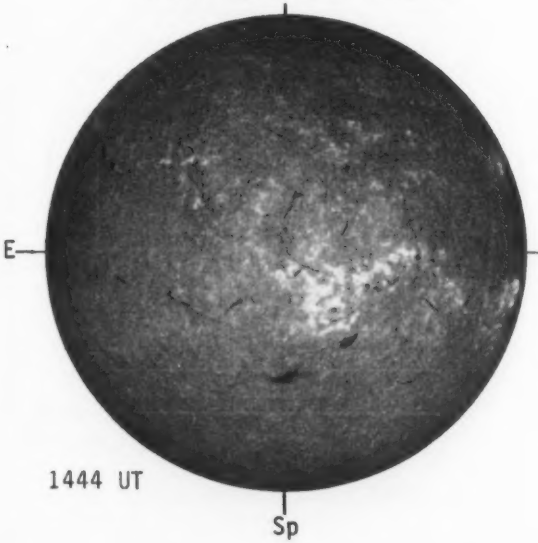


MT. WILSON MAGNETOGRAM

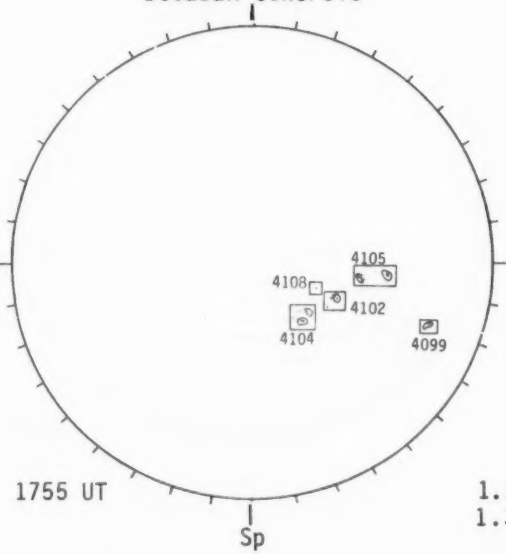
Solid = +
Dotted= -



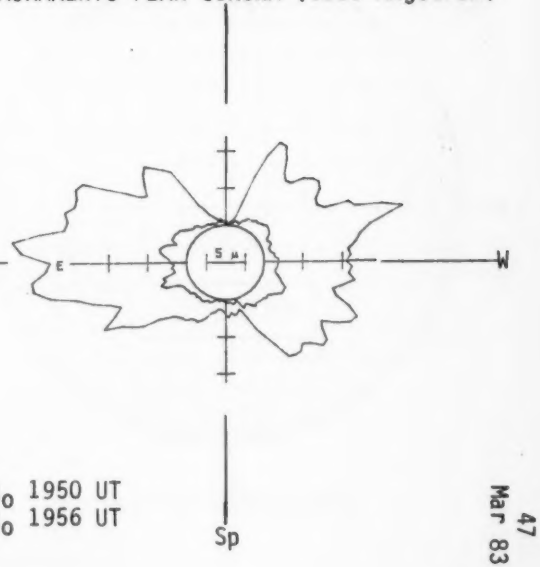
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (5303 Angstrom)

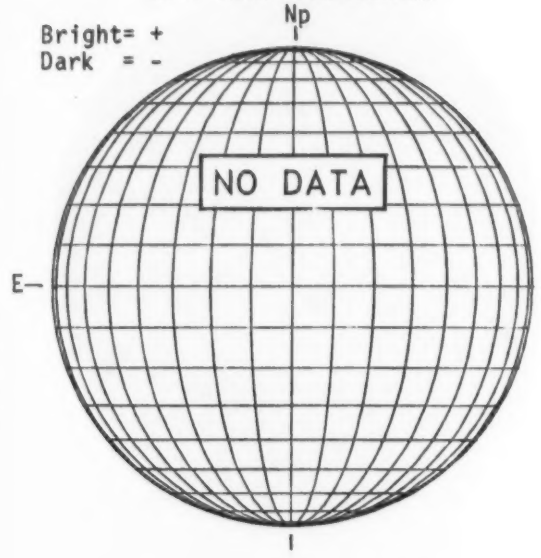


47
Mar 83

M A R C H 07, 1 9 8 3 (P=-22.84, B_o=-7.25, L_o= 103.37)

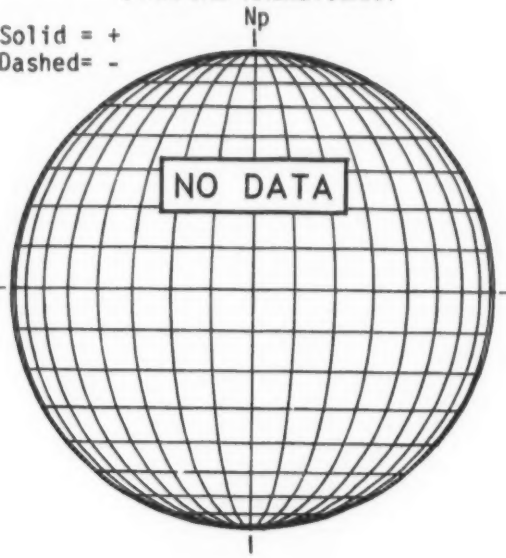
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



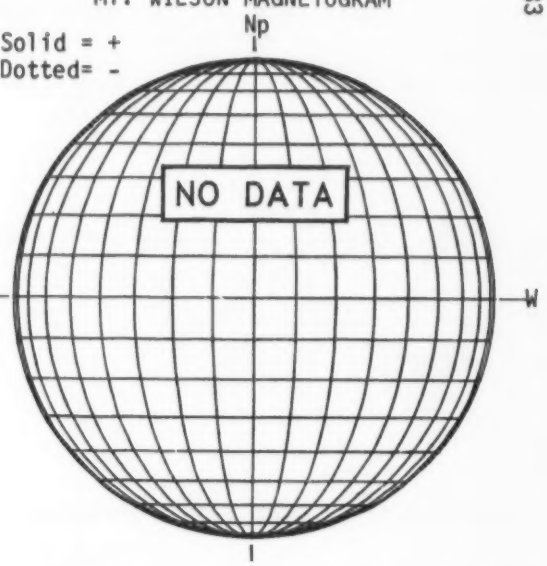
STANFORD MAGNETOGRAM

Solid = +
Dashed= -

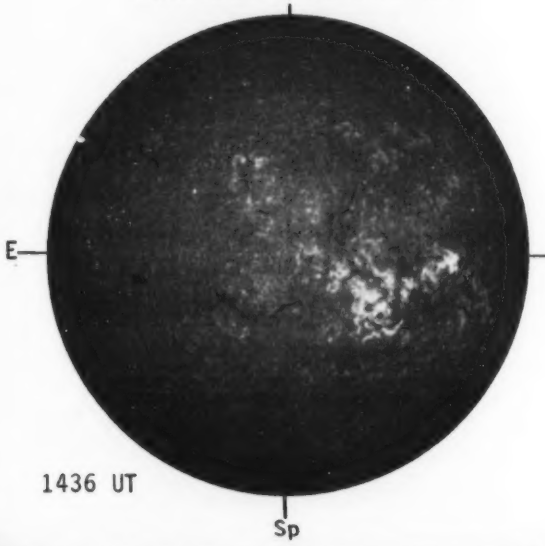


MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

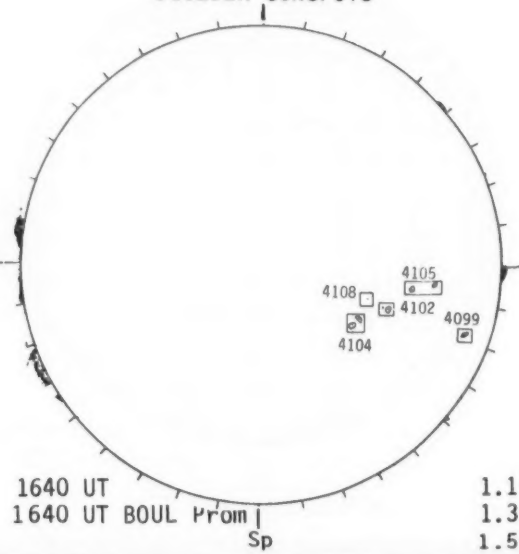


SACRAMENTO PEAK H-ALPHA



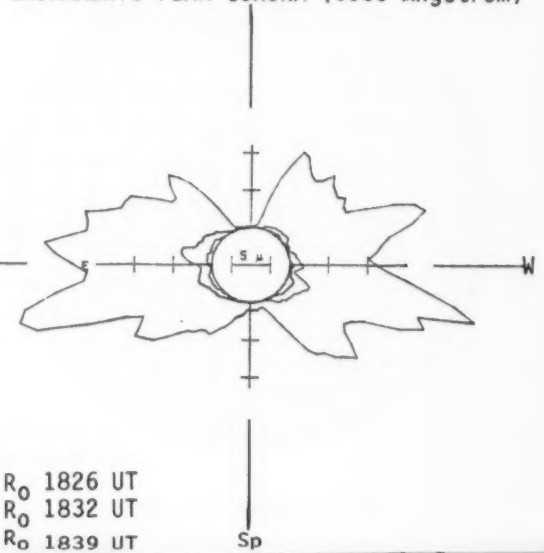
1436 UT

BOULDER SUNSPOTS



1640 UT
1640 UT BOUL From

SACRAMENTO PEAK CORONA (5303 Angstrom)



1.15 R_o 1826 UT
1.35 R_o 1832 UT
1.55 R_o 1839 UT

M A R C H 08, 1 9 8 3 (P=-23.06, B_o=-7.25, L_o= 90.19)

STANFORD MAGNETOGRAM

MT. WILSON MAGNETOGRAM

Sp

1640 UT BOUL Prom

Sp

1.35 R_o 1832 UT
1.55 R_o 1839 UT

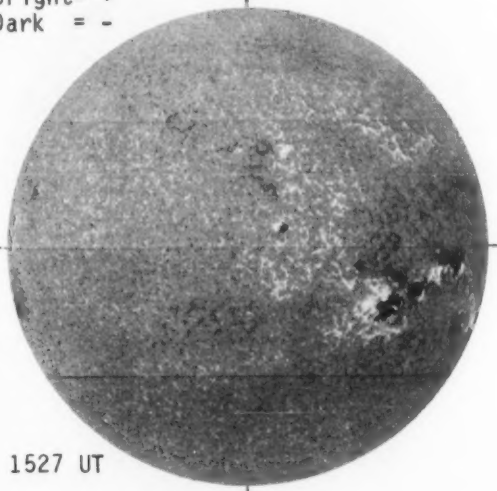
Sp

M A R C H 08, 1 9 8 3 (P=-23.06, B_o=-7.25, L_o= 90.19)

KITT PEAK MAGNETOGRAM

Bright= +
Dark = -

Np



E

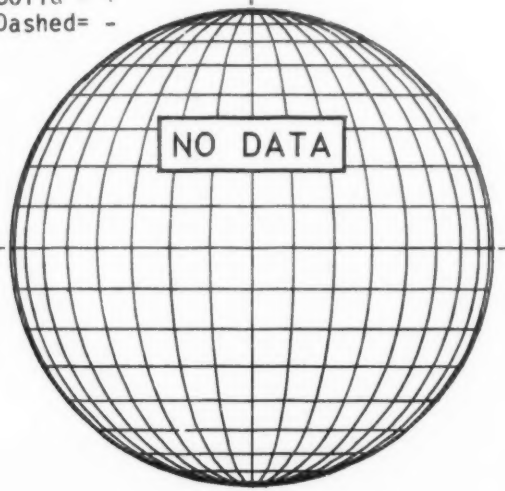
1527 UT

Sp

STANFORD MAGNETOGRAM

Solid = +
Dashed= -

Np



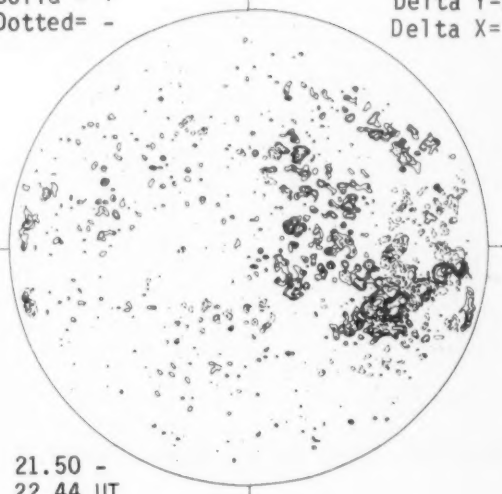
Sp

MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

Np

Delta Y=12.7
Delta X= 9.6

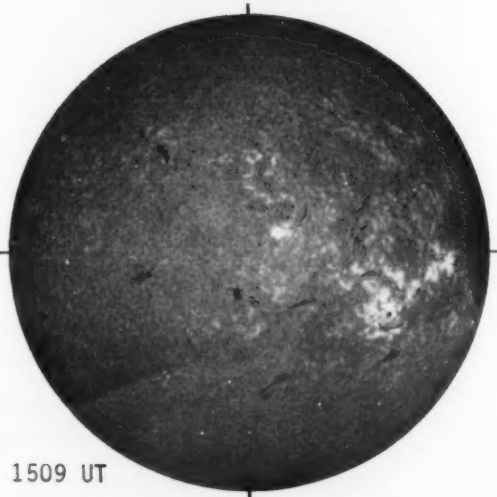


W

21.50 -
22.44 UT

Sp

SACRAMENTO PEAK H-ALPHA

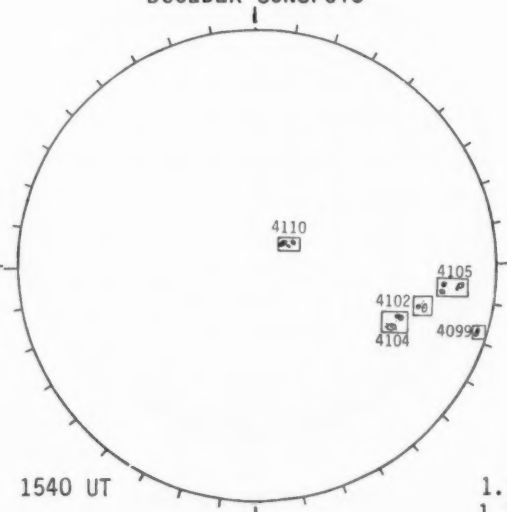


E

1509 UT

Sp

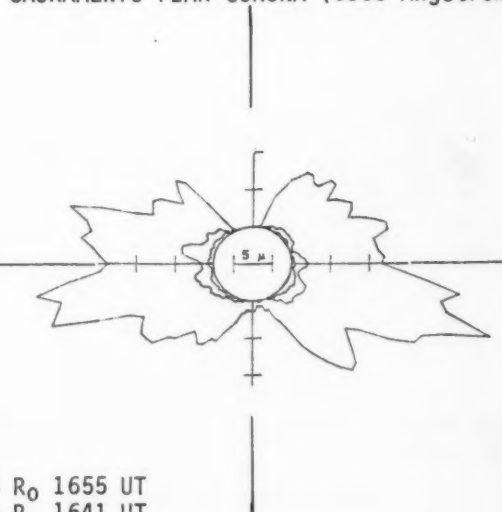
BOULDER SUNSPOTS



1540 UT

Sp

SACRAMENTO PEAK CORONA (5303 Angstrom)



W

1.15 R_o 1655 UT
1.35 R_o 1641 UT
1.55 R_o 1647 UT

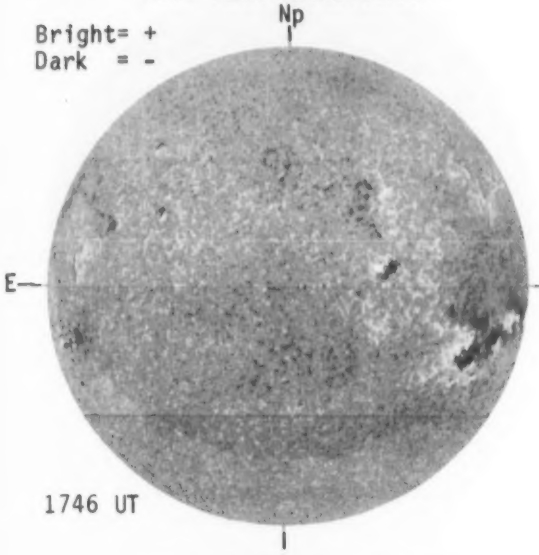
Sp

49
Mar 83

M A R C H 09, 1 9 8 3 (P=-23.27, B_0=-7.24, L_0= 77.01)

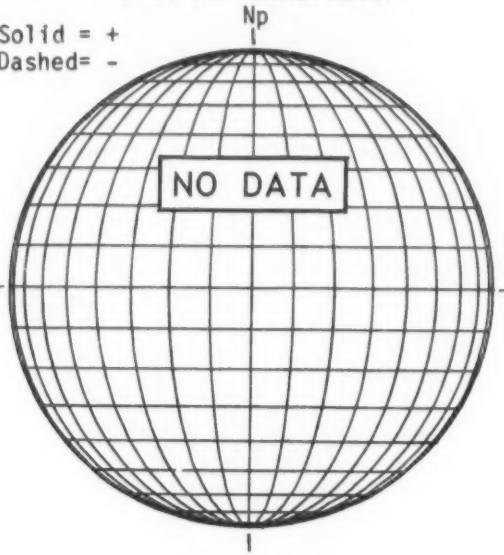
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



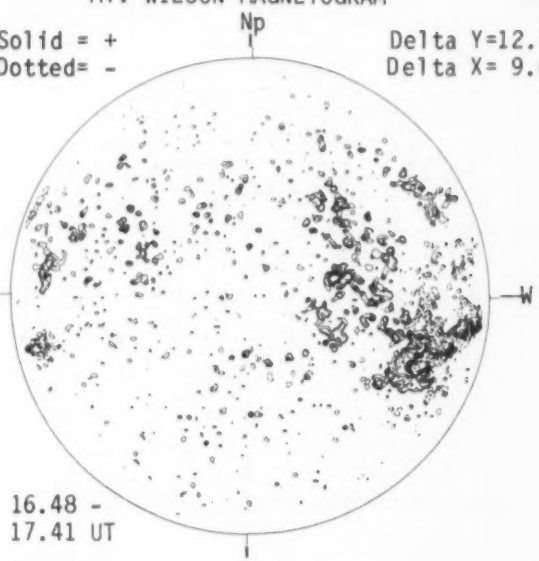
STANFORD MAGNETOGRAM

Solid = +
Dashed= -

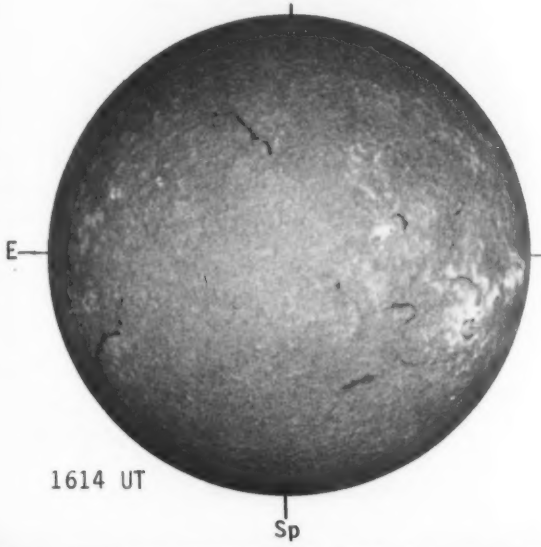


MT. WILSON MAGNETOGRAM

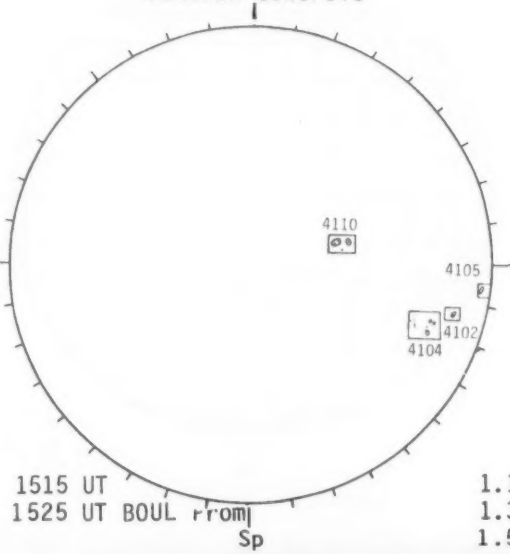
Solid = +
Dotted= -
Delta Y=12.7
Delta X= 9.6



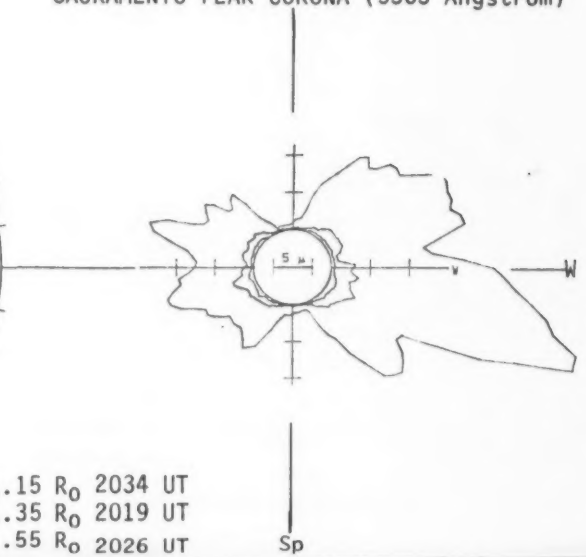
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (5303 Angstrom)



M A R C H 10, 1 9 8 3 (P=-23.47, B_0=-7.24, L_0= 63.84)

1525 UT BOUL from

Sp Sp

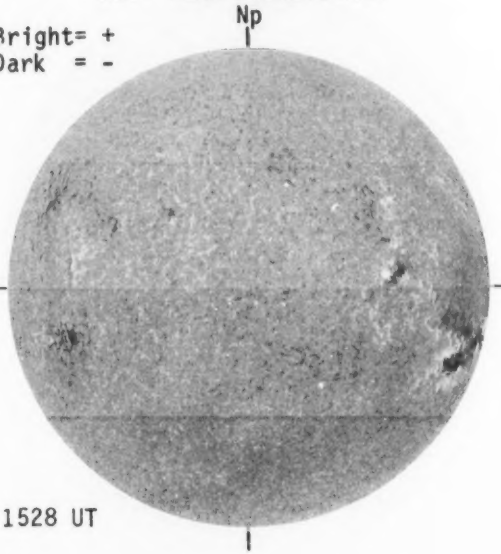
1.35 R_o 2019 UT
1.55 R_o 2026 UT

Sp

M A R C H 10, 1 9 8 3 (P=-23.47, B_o=-7.24, L_o= 63.84)

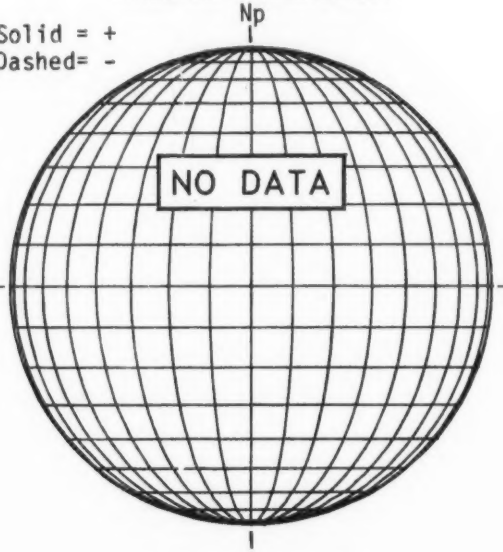
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



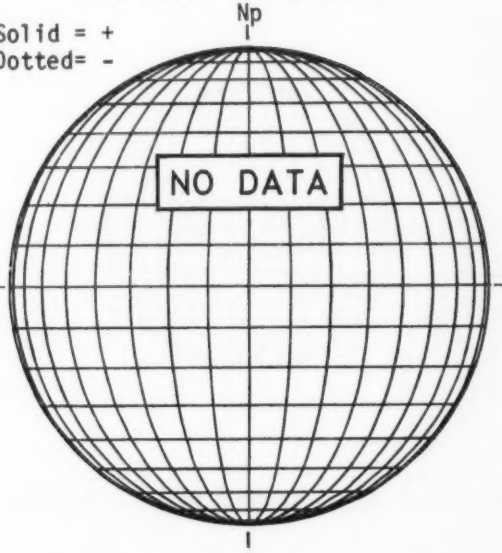
STANFORD MAGNETOGRAM

Solid = +
Dashed= -

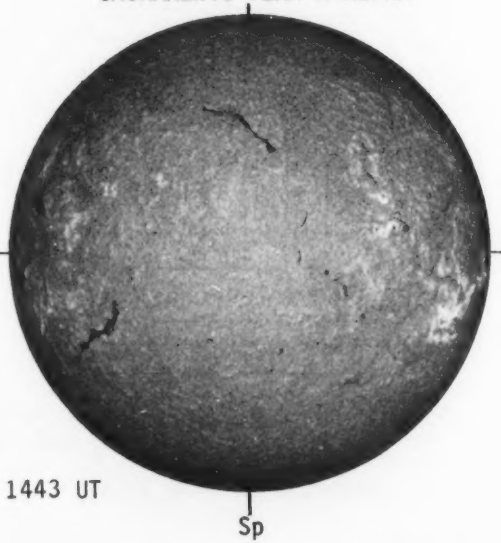


MT. WILSON MAGNETOGRAM

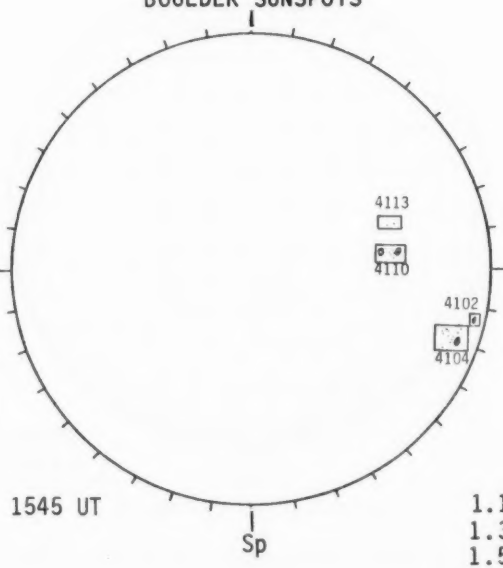
Solid = +
Dotted= -



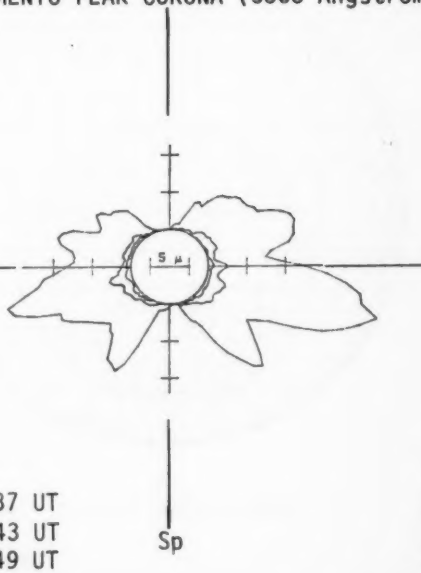
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (5303 Angstrom)

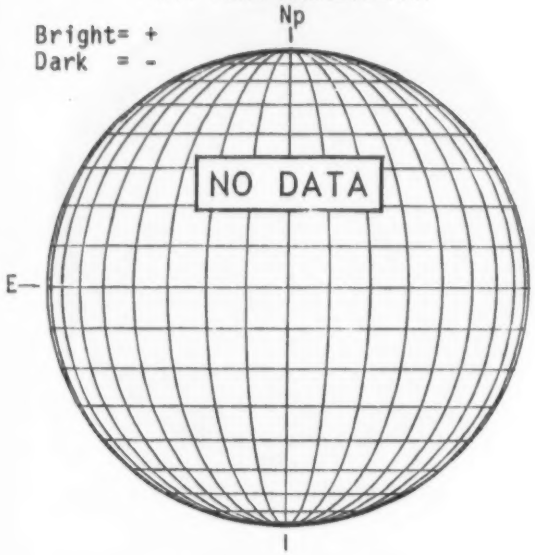


1.15 R_o 1437 UT
1.35 R_o 1443 UT
1.55 R_o 1449 UT

M A R C H 11, 1 9 8 3 (P=-23.66, B_o=-7.23, L_o= 50.66)

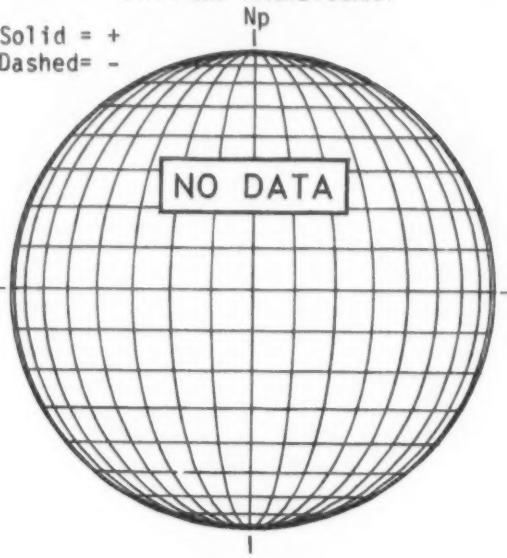
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



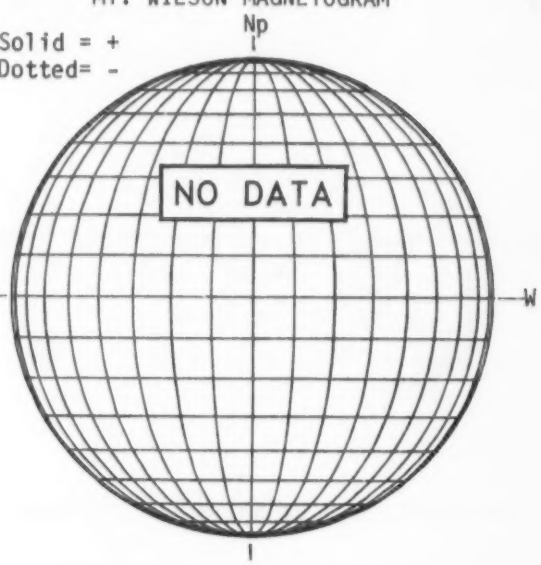
STANFORD MAGNETOGRAM

Solid = +
Dashed= -

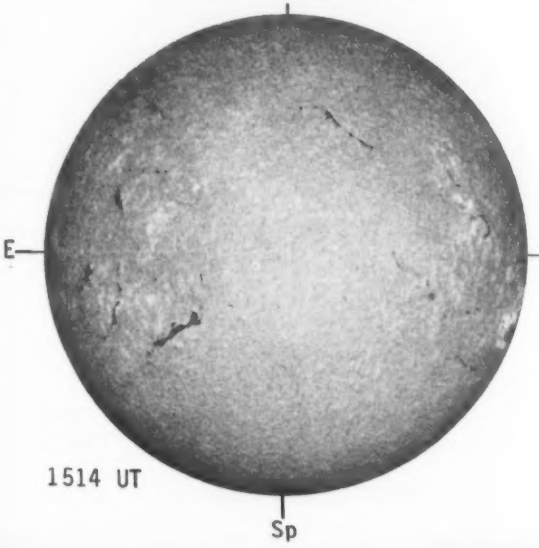


MT. WILSON MAGNETOGRAM

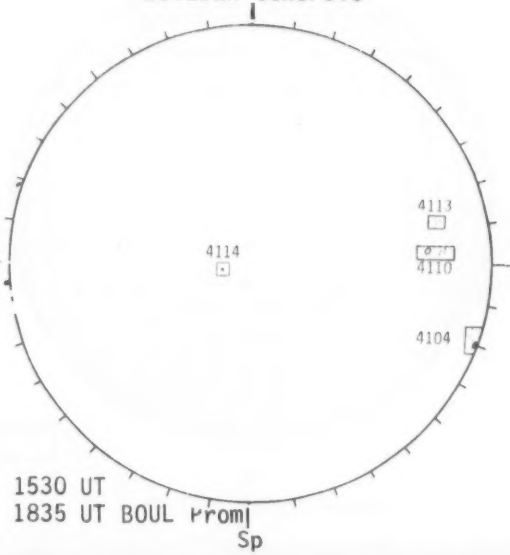
Solid = +
Dotted= -



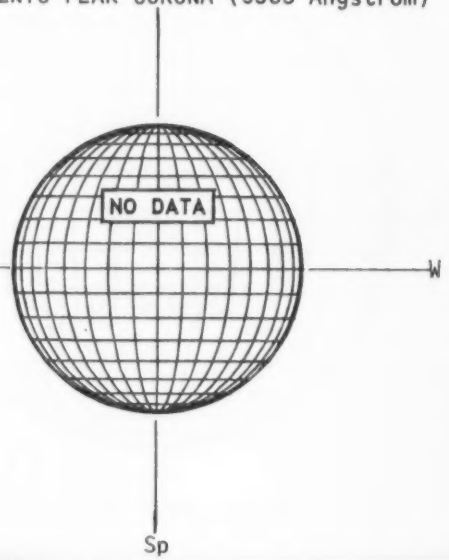
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (5303 Angstrom)



M A R C H 12, 1 9 8 3 (P=-23.85, B_o=-7.22, L_o= 37.48)

Sp

1835 UT BOUL From

Sp

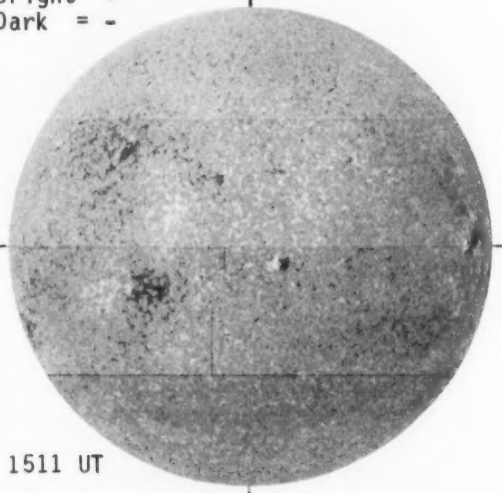
Sp

M A R C H 12, 1 9 8 3 (P=-23.85, B_o=-7.22, L_o= 37.48)

KITT PEAK MAGNETOGRAM

Np

Bright= +
Dark = -



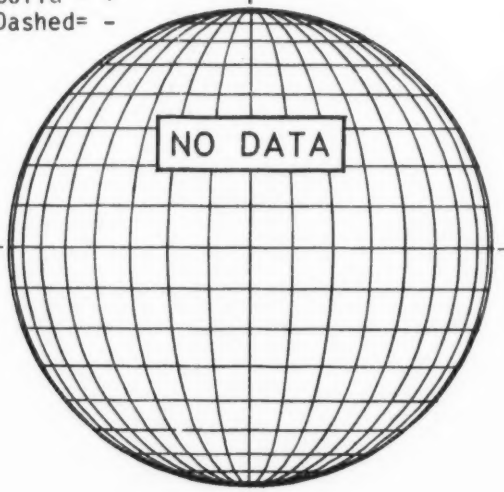
E

1511 UT

STANFORD MAGNETOGRAM

Np

Solid = +
Dashed= -

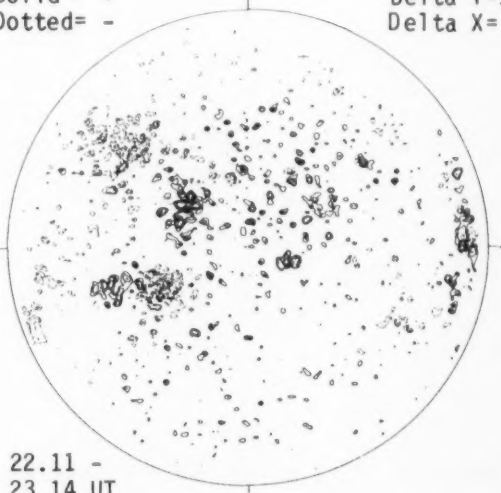


MT. WILSON MAGNETOGRAM

Np

Solid = +
Dotted= -

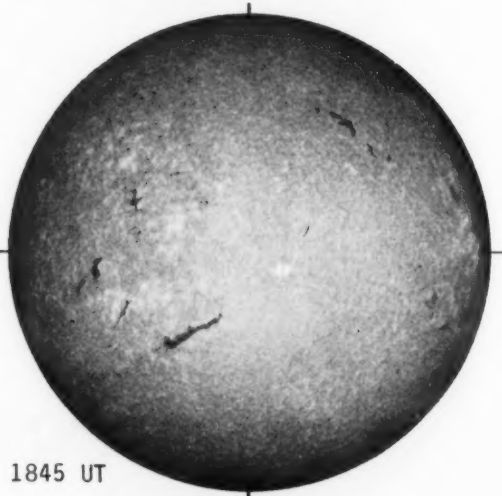
Delta Y=12.7
Delta X= 9.6



W

22.11 -
23.14 UT

SACRAMENTO PEAK H-ALPHA

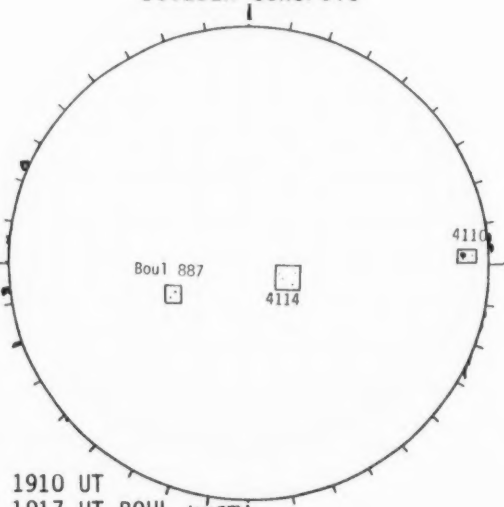


E

1845 UT

Sp

BOULDER SUNSPOTS



1910 UT
1917 UT BOUL From

Sp

SACRAMENTO PEAK CORONA (5303 Angstrom)

W

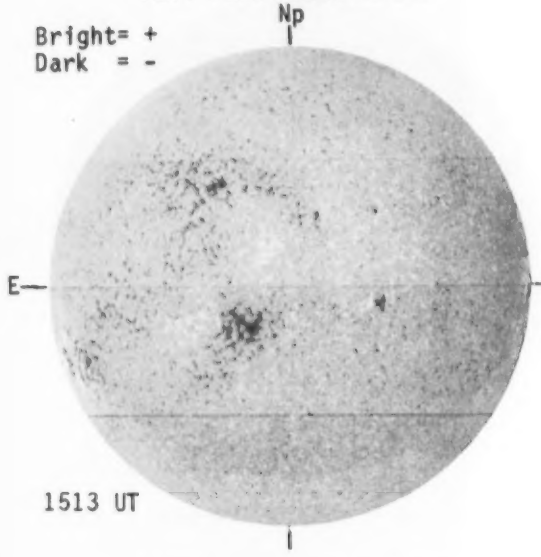
Sp

53
Mar 83

M A R C H 13, 1 9 8 3 (P=-24.03, B_o=-7.21, L_o= 24.30)

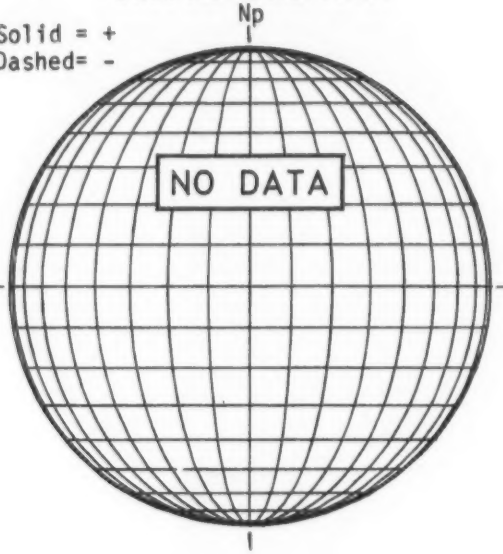
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

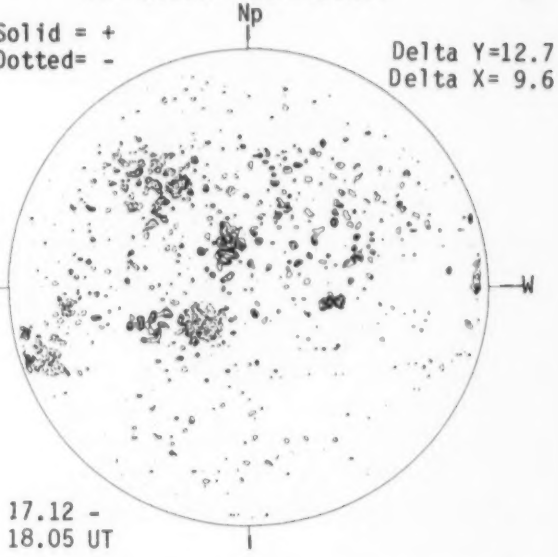
Solid = +
Dashed= -



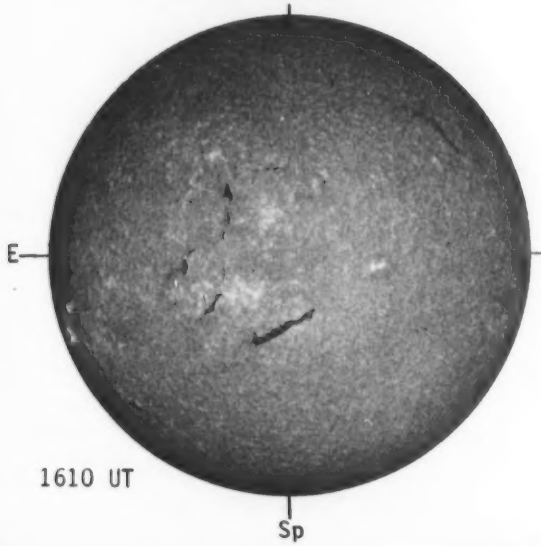
MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

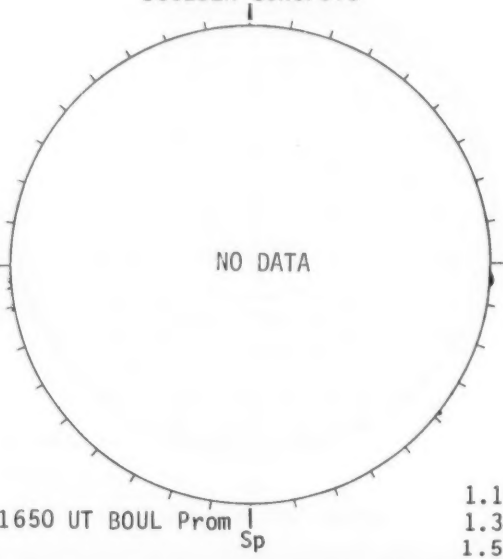
Delta Y=12.7
Delta X= 9.6



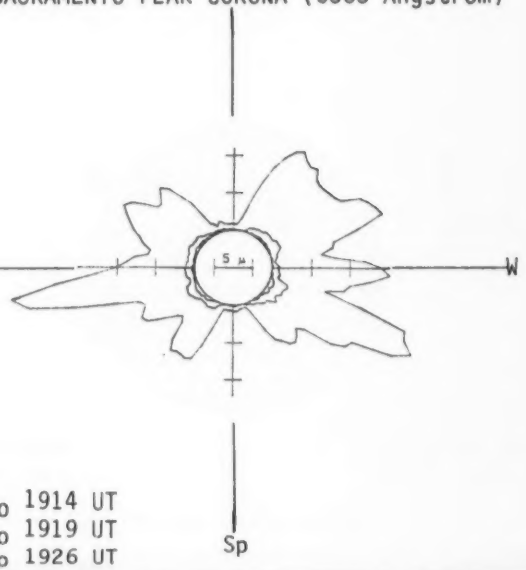
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (5303 Angstrom)



1.15 R_o 1914 UT
1.35 R_o 1919 UT
1.55 R_o 1926 UT

M A R C H 14, 1 9 8 3 (P=-24.21, B_o=-7.19, L_o= 11.13)

KITT PEAK MAGNETOGRAM

STANFORD MAGNETOGRAM

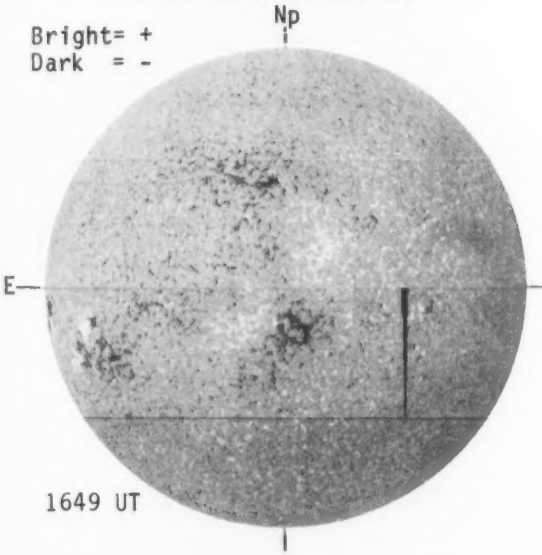
MT. WILSON MAGNETOGRAM

Sp Sp 1.55 R_o 1926 UT Sp

M A R C H 14, 1 9 8 3 (P=-24.21, B_o=-7.19, L_o= 11.13)

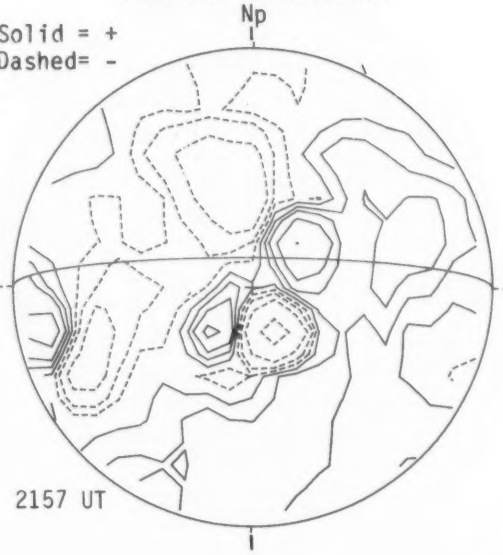
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



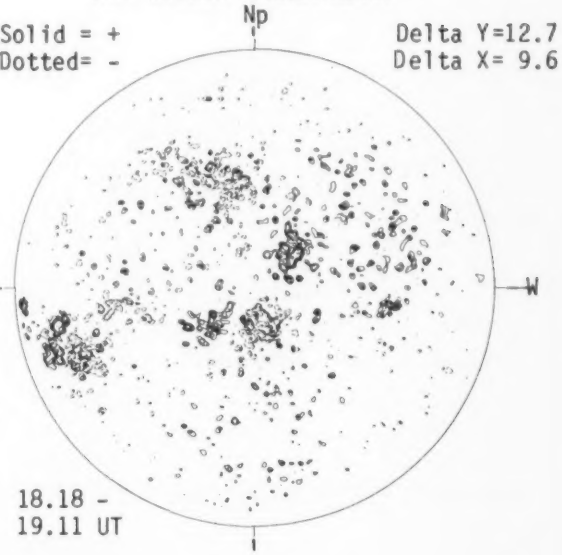
STANFORD MAGNETOGRAM

Solid = +
Dashed= -

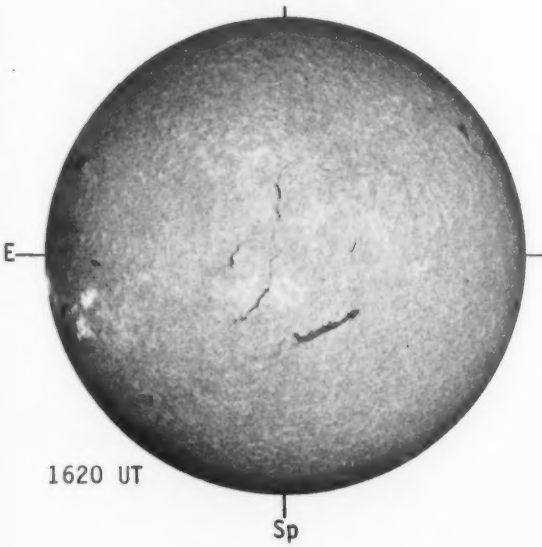


MT. WILSON MAGNETOGRAM

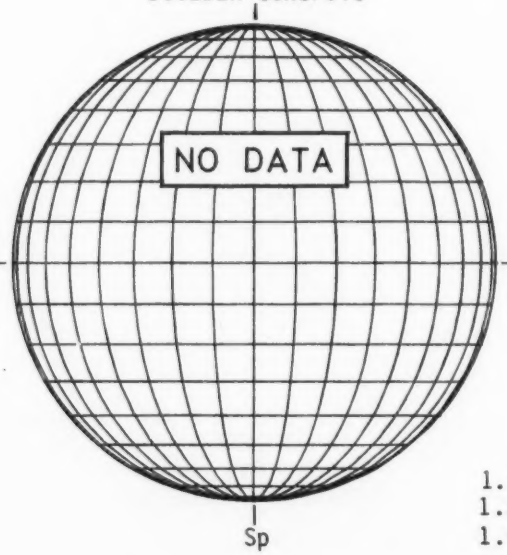
Solid = +
Dotted= -
Delta Y=12.7
Delta X= 9.6



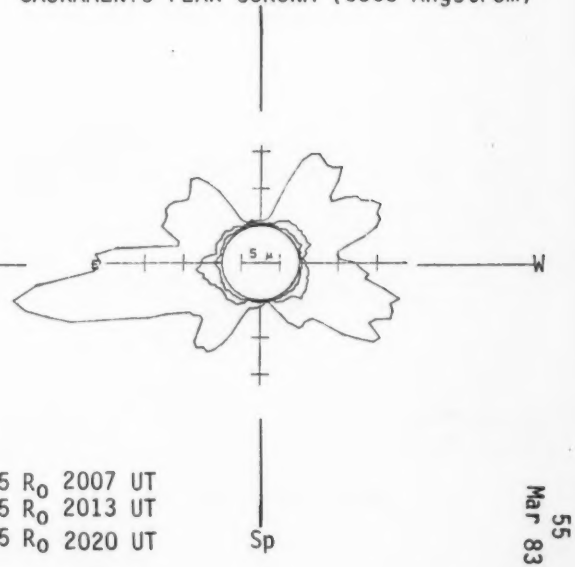
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (5303 Angstrom)



55
Mar 83

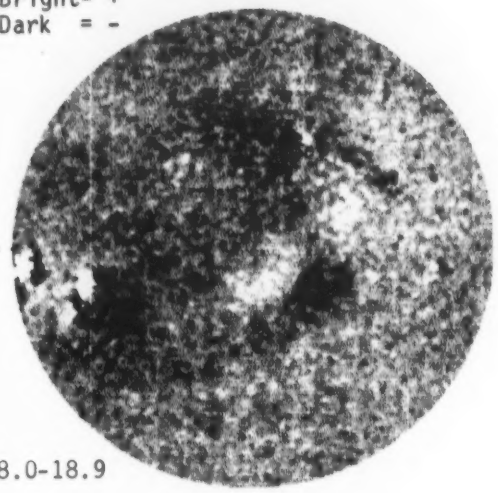
M A R C H 15, 1 9 8 3 (P=-24.37, B_o=-7.17, L_o= 357.95)

MT. WILSON MAGNETOGRAM

Np

Bright= +
Dark = -

E—

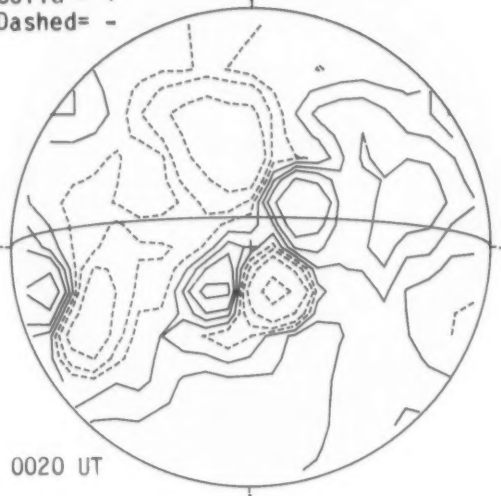


18.0-18.9

STANFORD MAGNETOGRAM

Np

Solid = +
Dashed= -



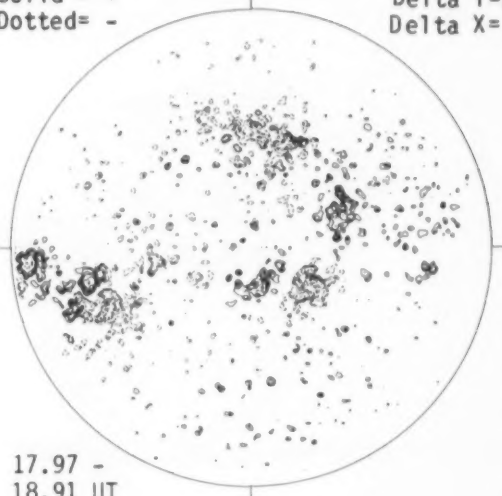
0020 UT

MT. WILSON MAGNETOGRAM

Np

Solid = +
Dotted= -

Delta Y=12.7
Delta X= 9.6

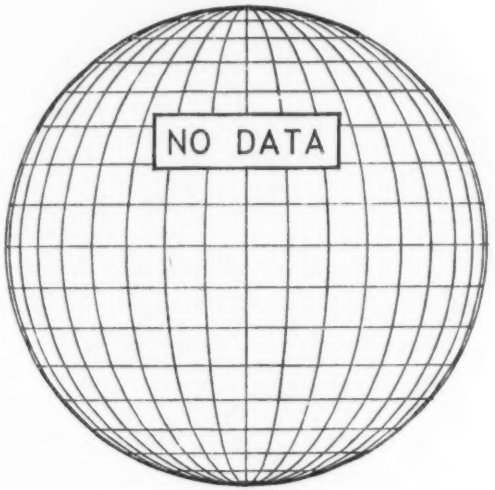


—W

17.97 -
18.91 UT

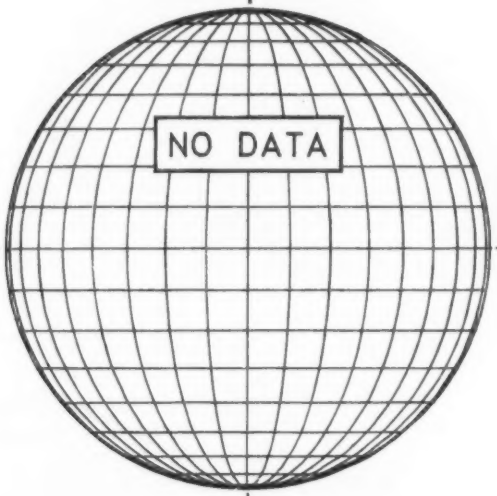
SACRAMENTO PEAK H-ALPHA

E—



Sp

BOULDER SUNSPOTS



Sp

SACRAMENTO PEAK CORONA (5303 Angstrom)

Sp

—W

M A R C H 16 1 9 8 3 (P=-24.54, B_o=-7.15, L_o= 344.77)

KITT PEAK MAGNETOGRAM

STANFORD MAGNETOGRAM

MT. WILSON MAGNETOGRAM

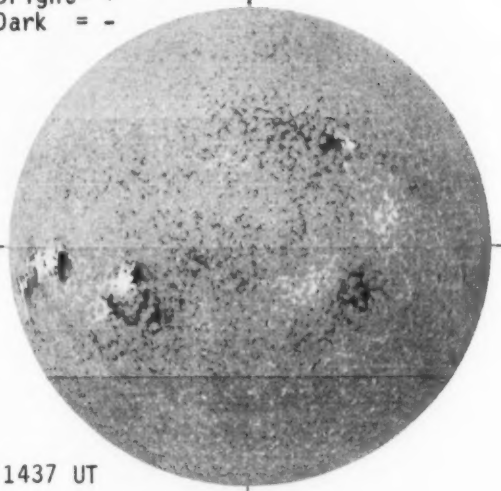
Sp Sp Sp

M A R C H 16 1 9 8 3 (P=-24.54, B_o=-7.15, L_o= 344.77)

KITT PEAK MAGNETOGRAM

Np

Bright= +
Dark = -



E

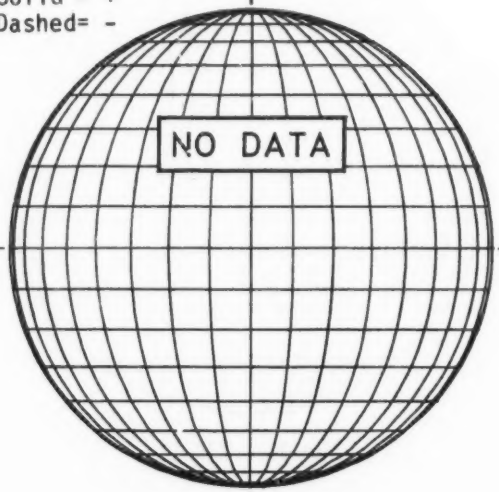
1437 UT

Sp

STANFORD MAGNETOGRAM

Np

Solid = +
Dashed= -

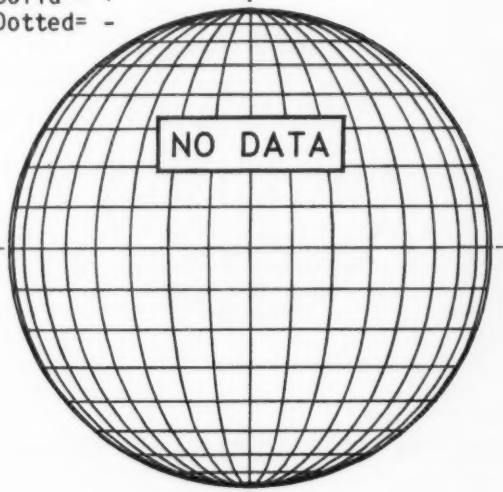


Sp

MT. WILSON MAGNETOGRAM

Np

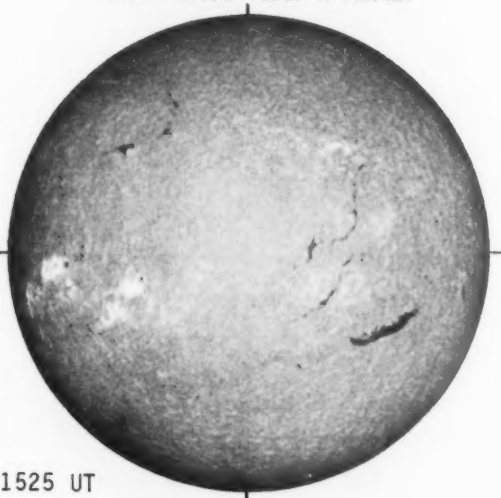
Solid = +
Dotted= -



W

Sp

SACRAMENTO PEAK H-ALPHA

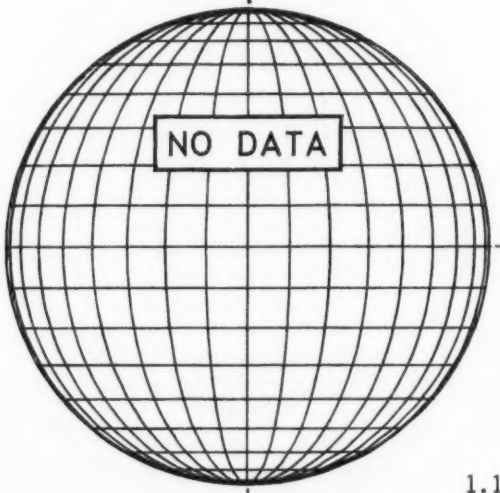


E

1525 UT

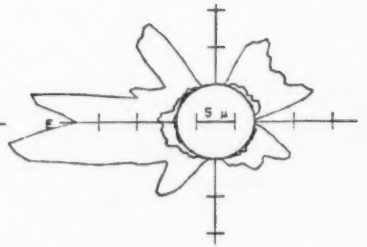
Sp

BOULDER SUNSPOTS



Sp

SACRAMENTO PEAK CORONA (5303 Angstrom)



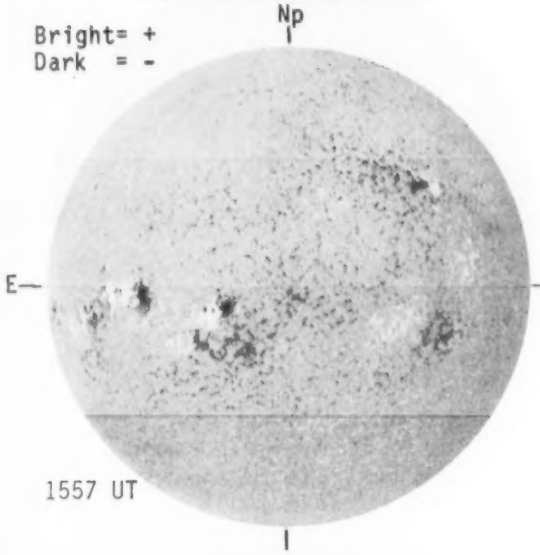
W

1.15 R_o 1456 UT
1.35 R_o 1442 UT
1.55 R_o 1448 UT

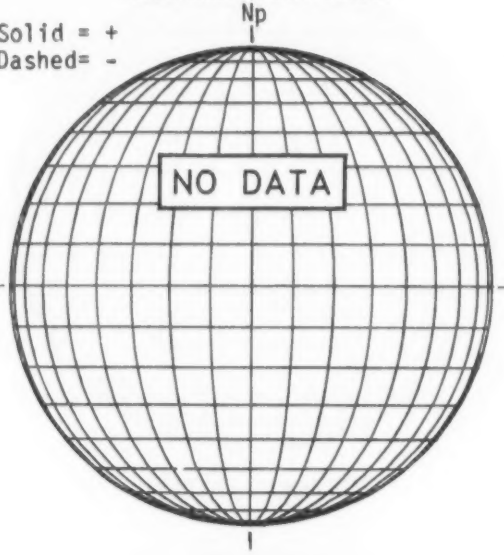
Sp

M A R C H 17, 1 9 8 3 (P=-24.69, B_o=-7.13, L_o= 331.59)

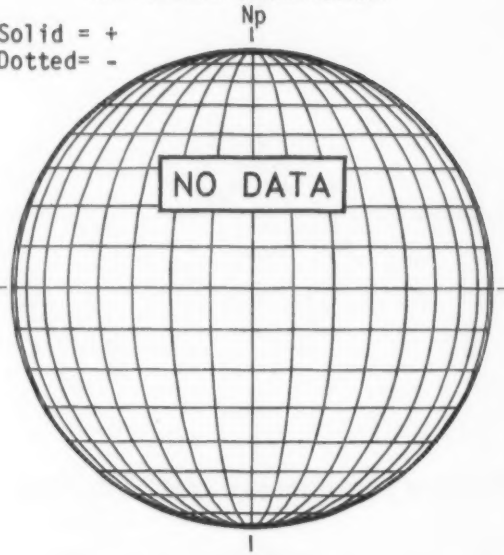
KITT PEAK MAGNETOGRAM



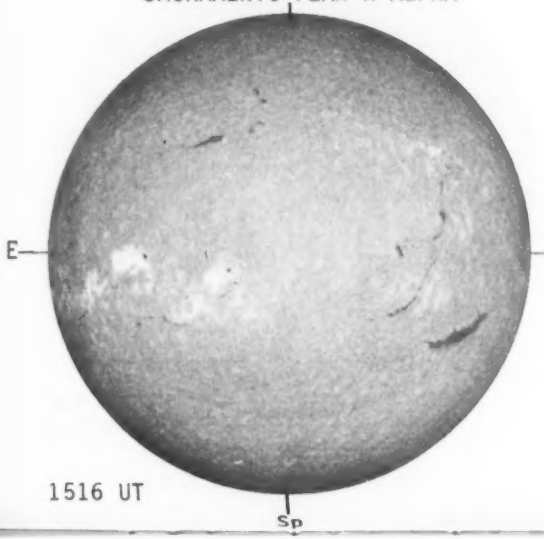
STANFORD MAGNETOGRAM



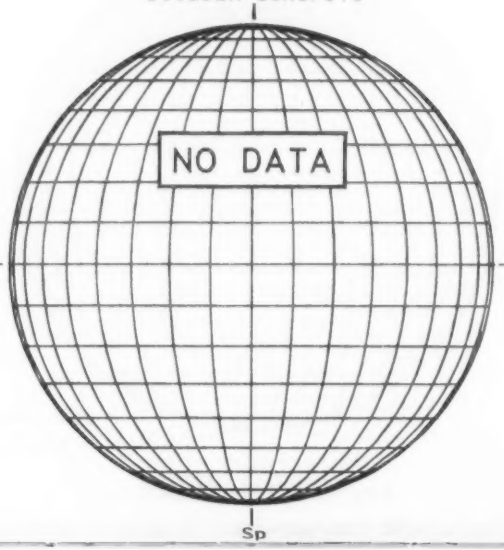
MT. WILSON MAGNETOGRAM



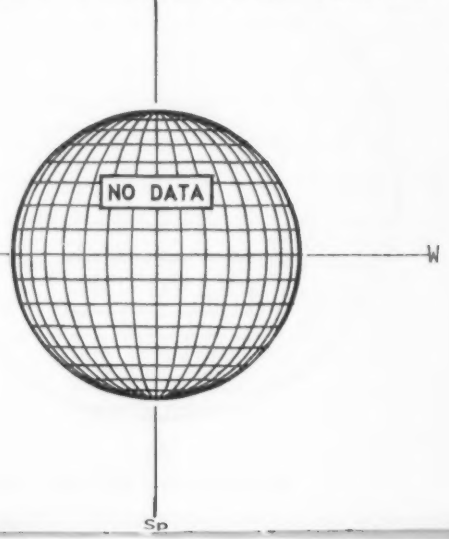
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (5303 Angstrom)



M A R C H 18, 1 9 8 3 (P=-24.84, B_o=-7.11, L_o= 318.40)

KITT PEAK MAGNETOGRAM

STANFORD MAGNETOGRAM

MT. WILSON MAGNETOGRAM

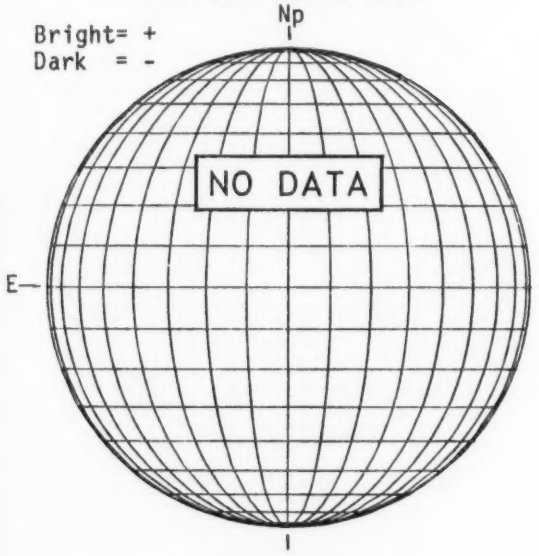
1516 UT

Sp Sp Sp

M A R C H 18, 1 9 8 3 (P=-24.84, B_o=-7.11, L_o= 318.40)

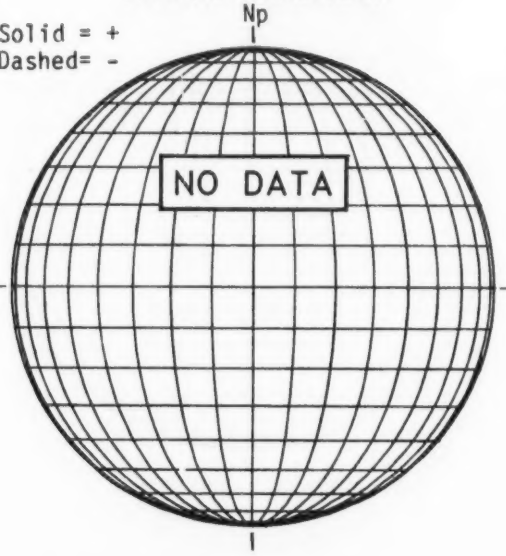
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



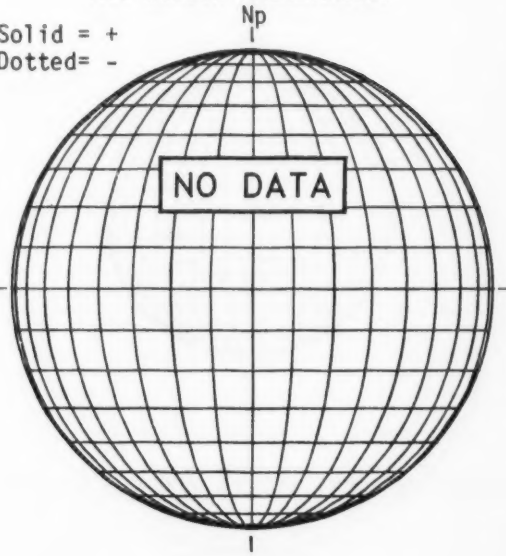
STANFORD MAGNETOGRAM

Solid = +
Dashed= -

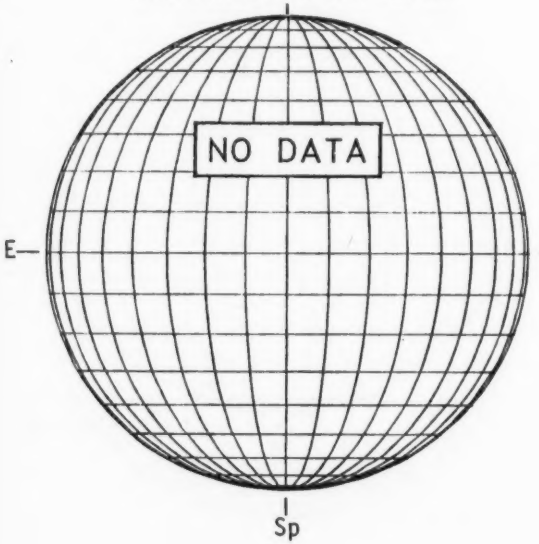


MT. WILSON MAGNETOGRAM

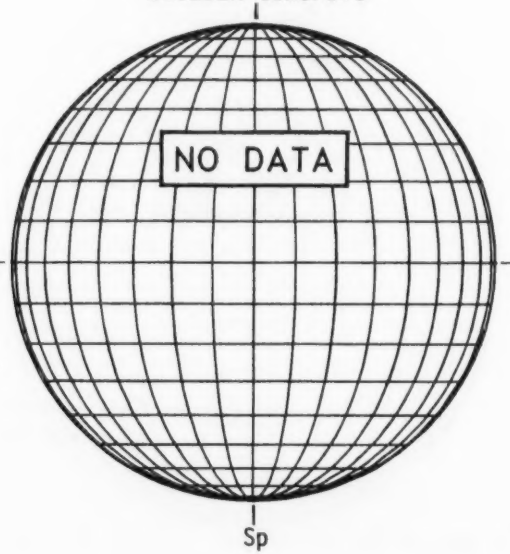
Solid = +
Dotted= -



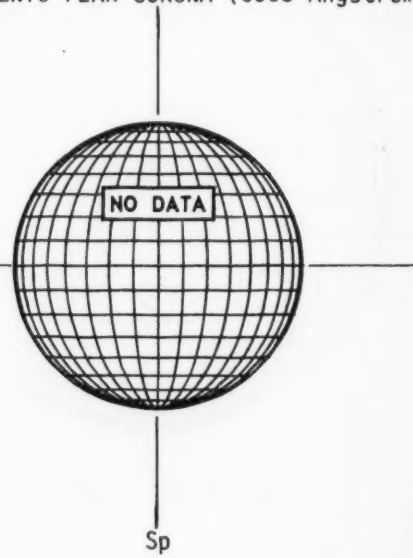
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (5303 Angstrom)

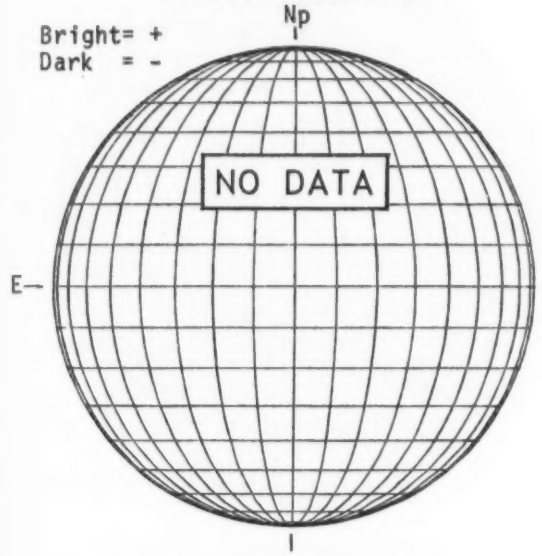


59
Mar 83

M A R C H 19, 1 9 8 3 (P=-24.98, B_o=-7.08, L_o= 305.22)

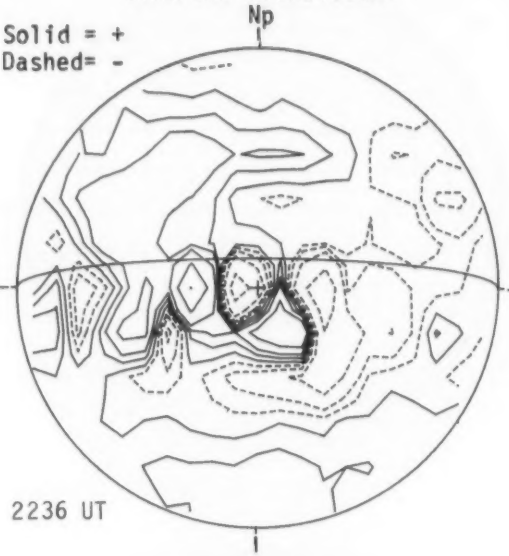
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



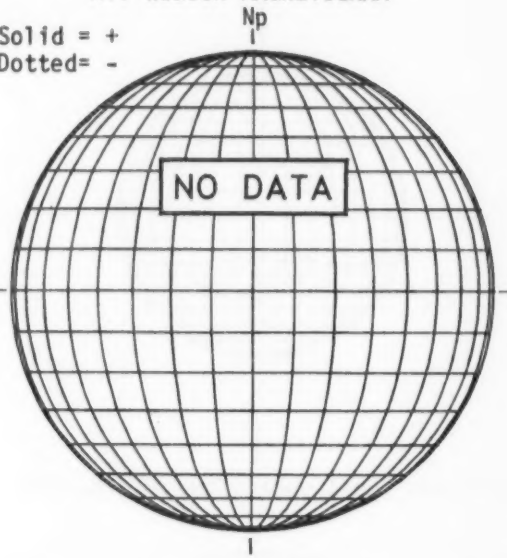
STANFORD MAGNETOGRAM

Solid = +
Dashed= -

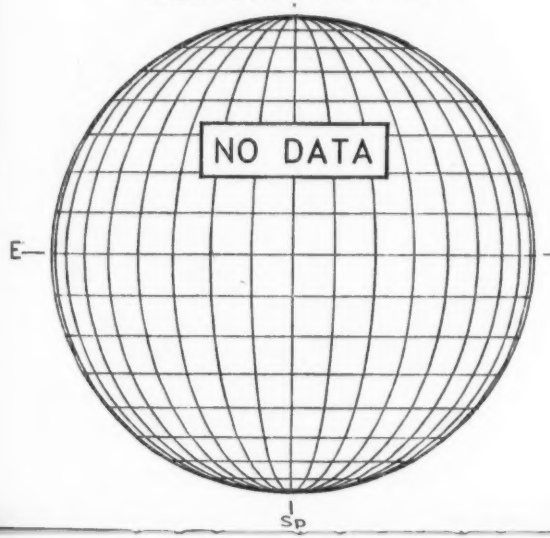


MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

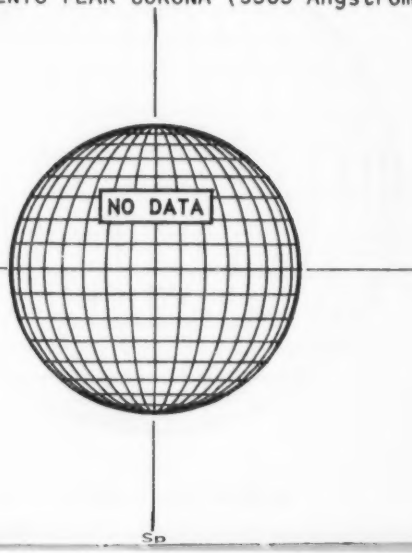


SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS

SACRAMENTO PEAK CORONA (5303 Angstrom)

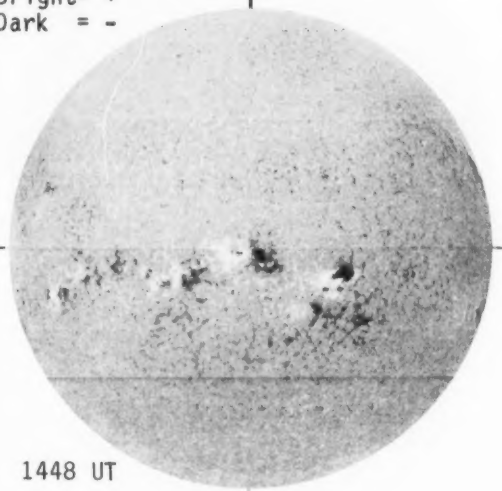


M A R C H 20, 1 9 8 3 (P=-25.11, B_o=-7.05, L_o= 292.04)

M A R C H 20, 1 9 8 3 (P=-25.11, B_o=-7.05, L_o= 292.04)

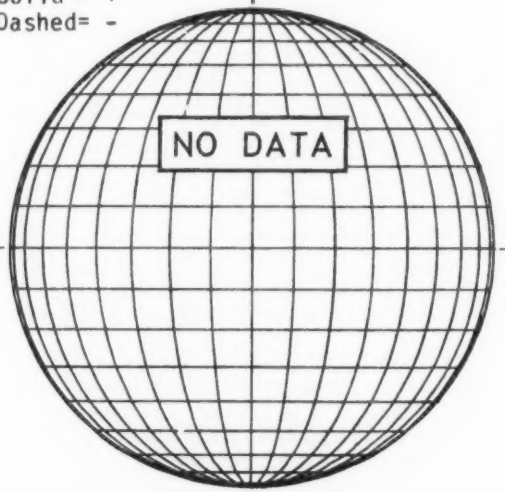
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



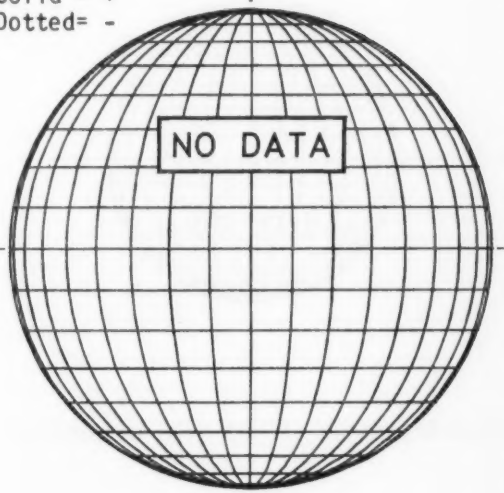
STANFORD MAGNETOGRAM

Solid = +
Dashed= -

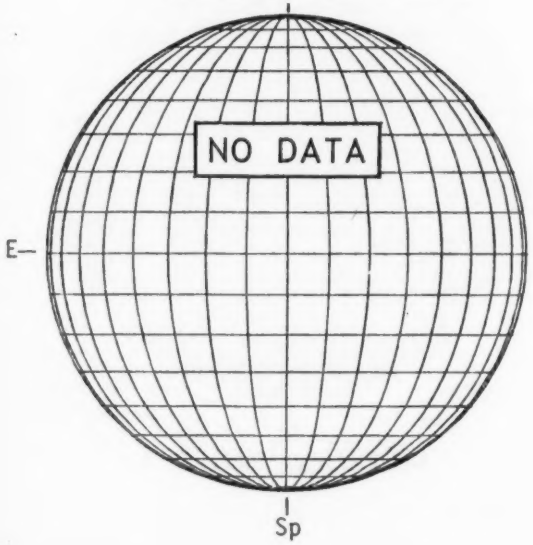


MT. WILSON MAGNETOGRAM

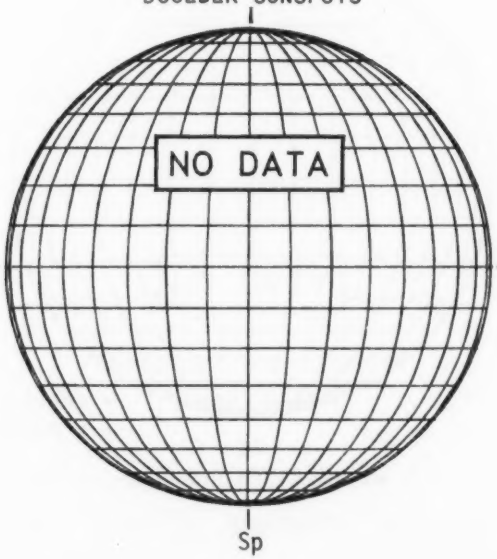
Solid = +
Dotted= -



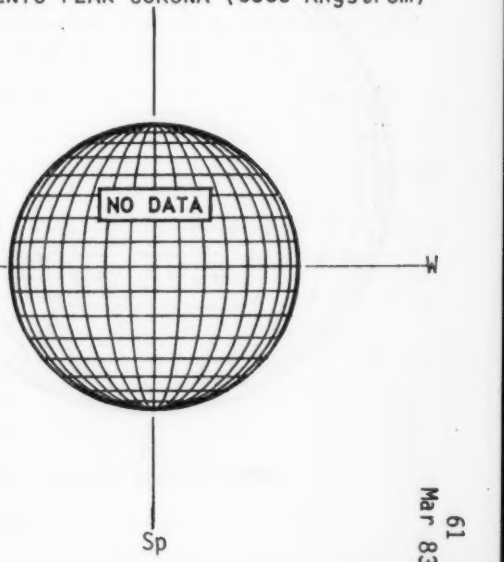
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



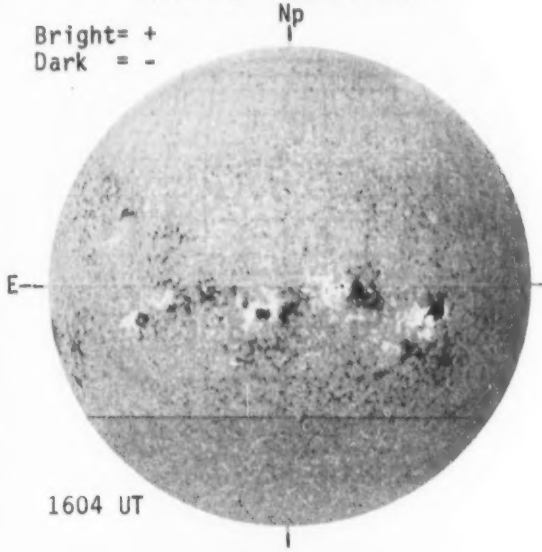
SACRAMENTO PEAK CORONA (5303 Angstrom)



M A R C H 21, 1 9 8 3 (P=-25.24, B_0=-7.02, L_0= 278.86)

KITT PEAK MAGNETOGRAM

Bright= +
Dark = -

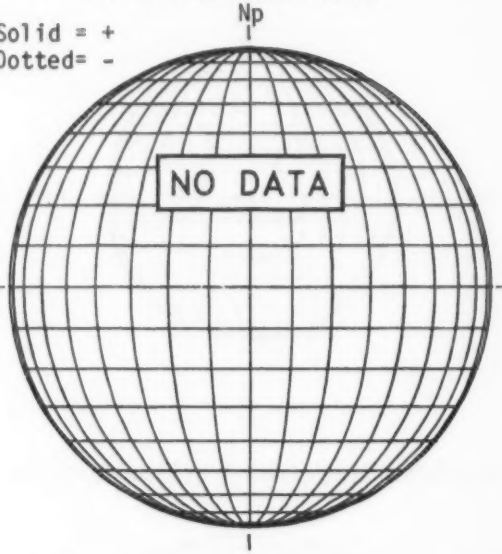


STANFORD MAGNETOGRAM

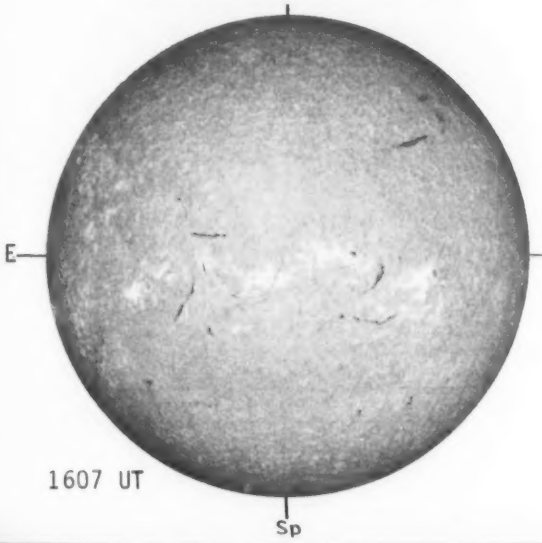
Solid = +
Dashed= -

MT. WILSON MAGNETOGRAM

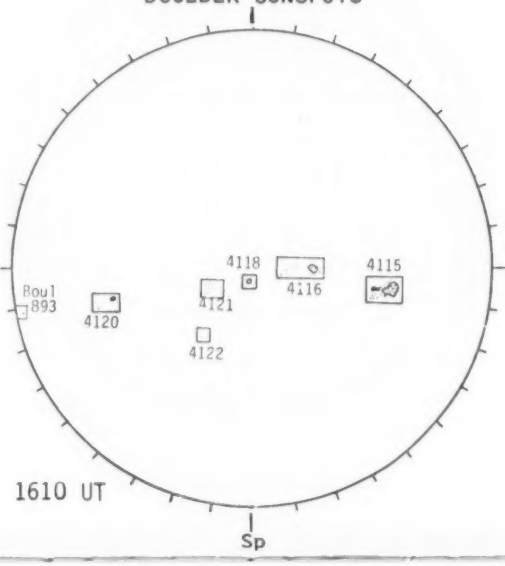
Solid = +
Dotted= -



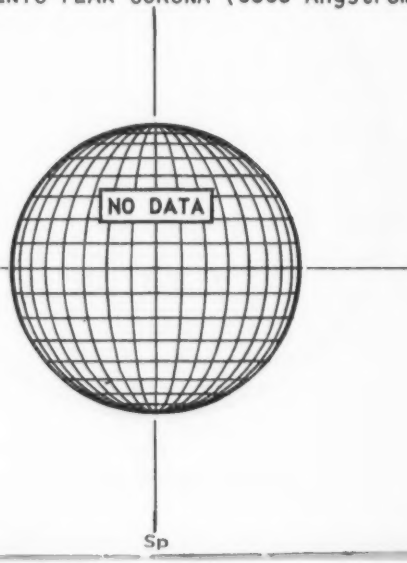
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (5303 Angstrom)



M A R C H 22, 1 9 8 3 (P=-25.36, B_0=-6.99, L_0= 265.67)

1607 UT

Sp

1610 UT

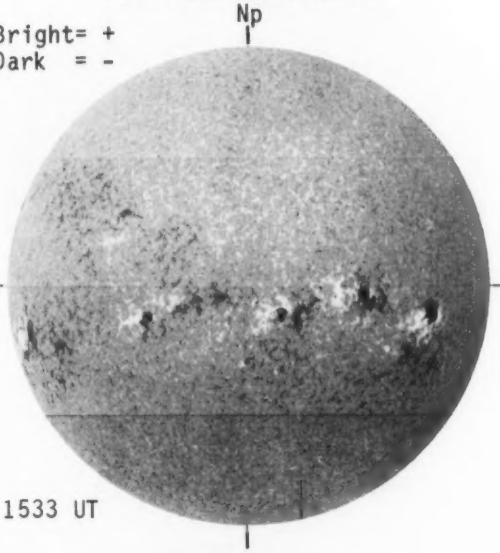
Sp

Sp

M A R C H 22, 1 9 8 3 (P=-25.36, B_0=-6.99, L_0= 265.67)

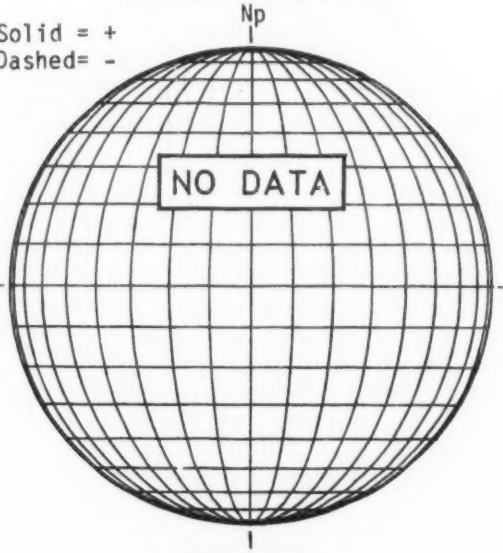
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

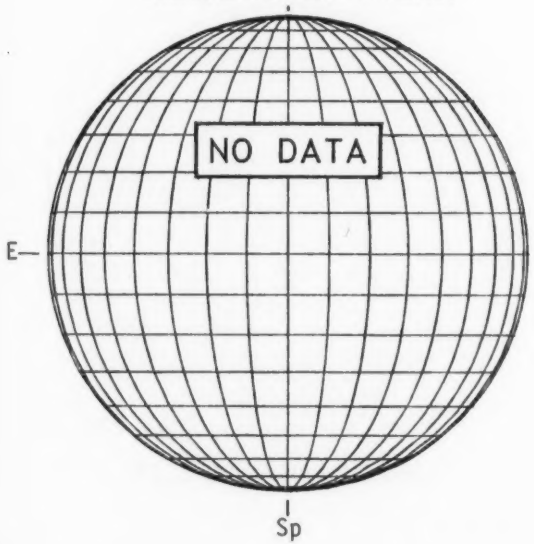
Solid = +
Dashed= -



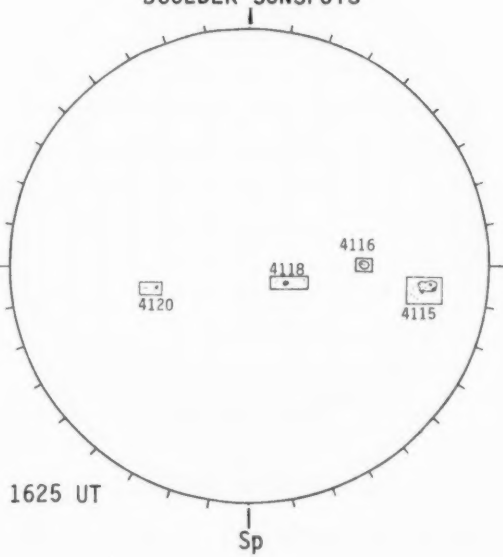
MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (5303 Angstrom)

63
Mar 83

M A R C H 23, 1 9 8 3 (P=-25.47, B_0=-6.96, L_0= 252.49)

KITT PEAK MAGNETOGRAM

Np

Bright= +
Dark = -

NO DATA

E

Sp

STANFORD MAGNETOGRAM

Np

Solid = +
Dashed= -

NO DATA

Sp

MT. WILSON MAGNETOGRAM

Np

Solid = +
Dotted= -

Delta Y=12.7
Delta X= 9.6

16.01 -
16.93 UT

W

Sp

SACRAMENTO PEAK H-ALPHA

E

1433 UT

Sp

BOULDER SUNSPOTS

NO DATA

Sp

SACRAMENTO PEAK CORONA (5303 Angstrom)

NO DATA

W

Sp

M A R C H 24, 1 9 8 3 (P=-25.58, B_0=-6.92, L_0= 239.30)

KITT PEAK MAGNETOGRAM

STANFORD MAGNETOGRAM

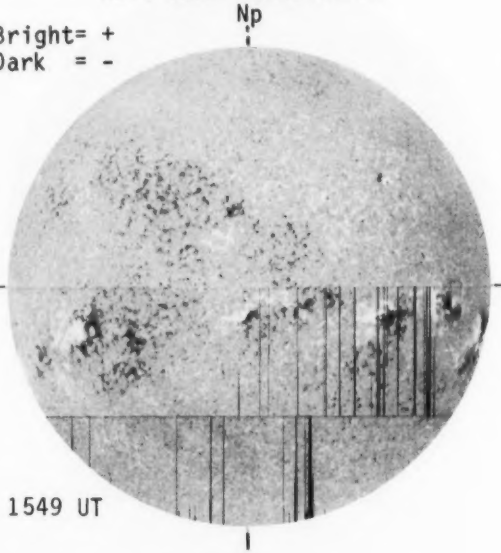
MT. WILSON MAGNETOGRAM

Sp Sp Sp

M A R C H 24, 1 9 8 3 (P=-25.58, B_o=-6.92, L_o= 239.30)

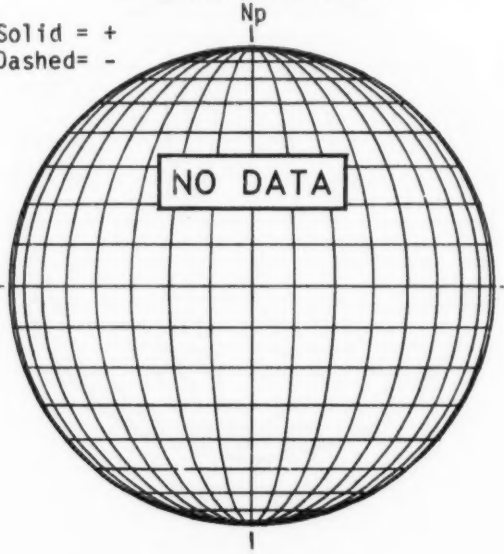
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

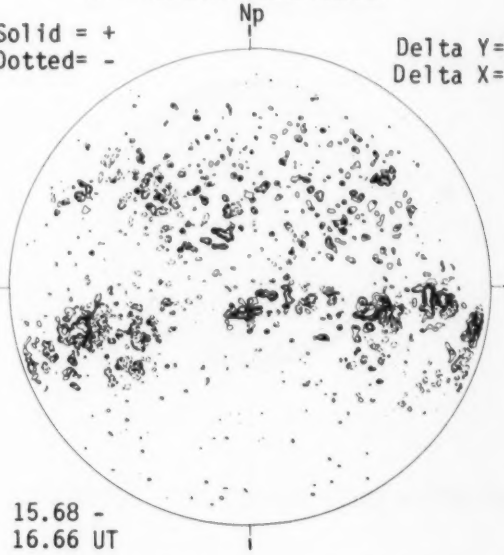
Solid = +
Dashed= -



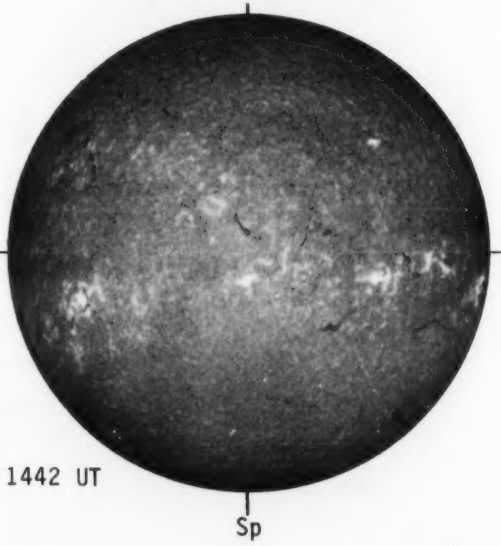
MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

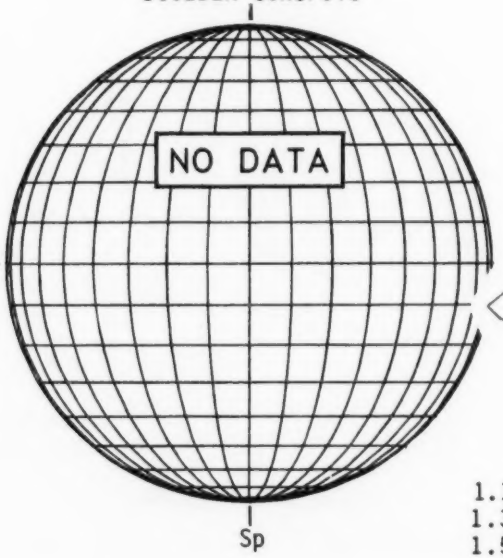
Delta Y=12.7
Delta X= 9.6



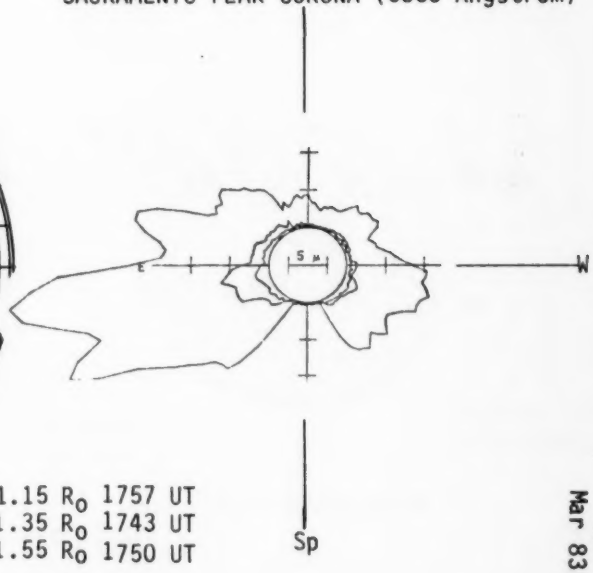
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (5303 Angstrom)

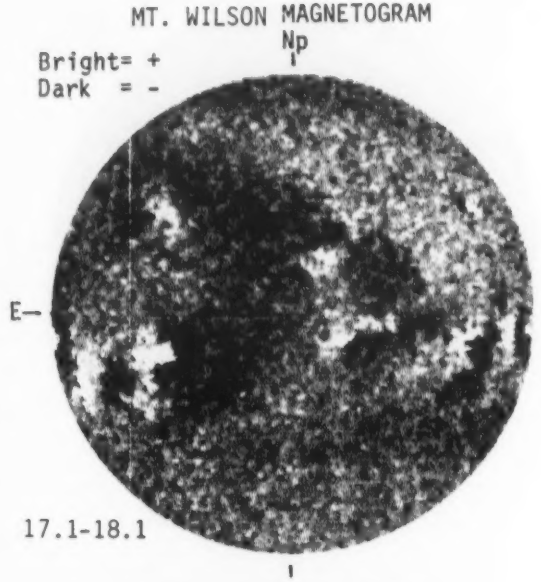


1.15 R_o 1757 UT
1.35 R_o 1743 UT
1.55 R_o 1750 UT

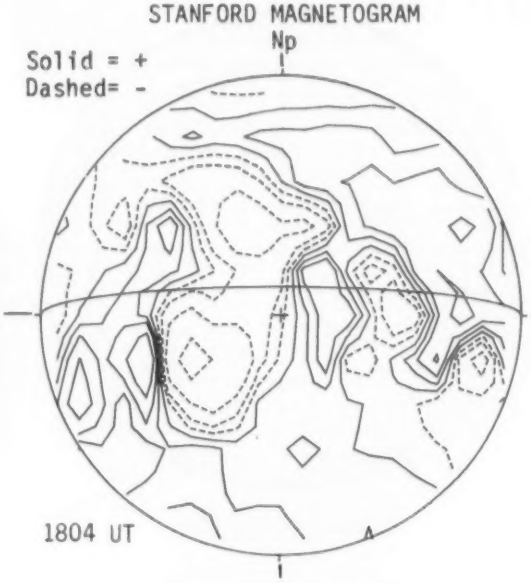
65
Mar 83

M A R C H 25, 1 9 8 3 (P=-25.68, B_o=-6.88, L_o= 226.11)

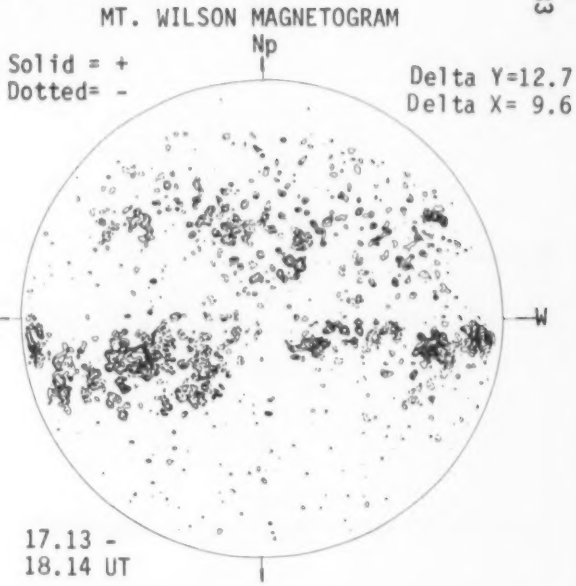
MT. WILSON MAGNETOGRAM



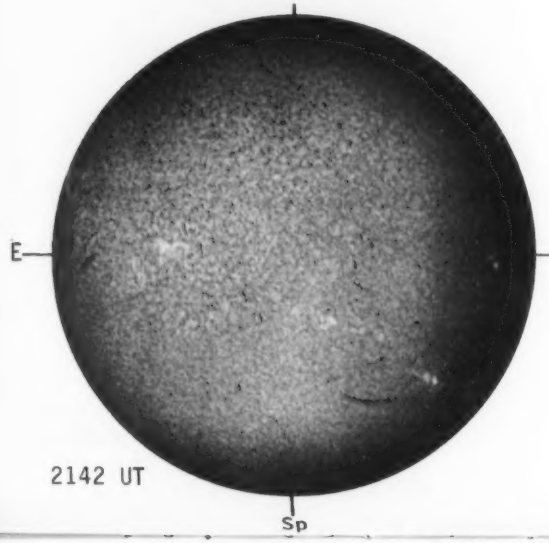
STANFORD MAGNETOGRAM



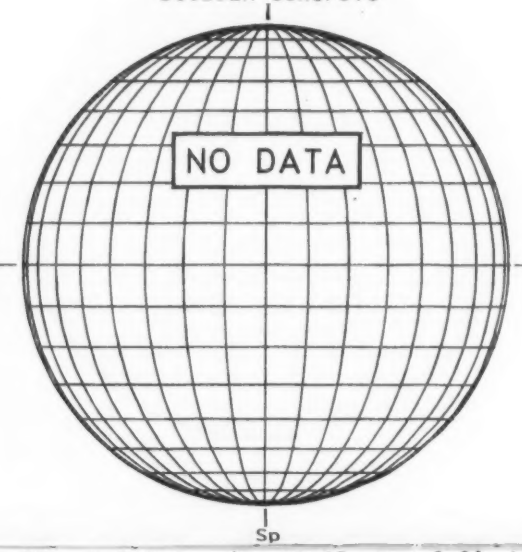
MT. WILSON MAGNETOGRAM



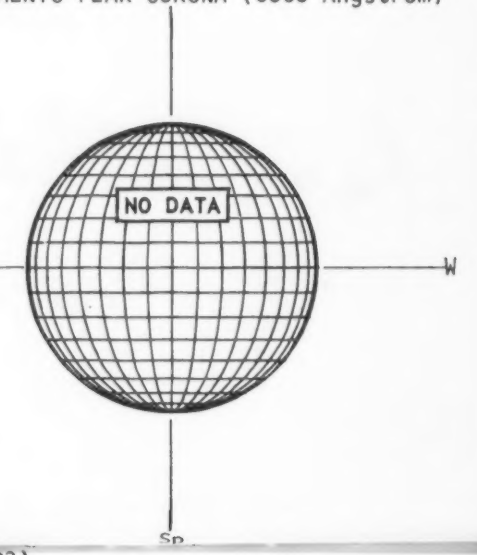
SAN FERNANDO H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (5303 Angstrom)



M A R C H 26, 1 9 8 3 (P=-25.77, B_o=-6.84, L_o= 212.93)

KITT PEAK MAGNETOGRAM

STANFORD MAGNETOGRAM

MT. WILSON MAGNETOGRAM

2142 UT

Sp

Sp

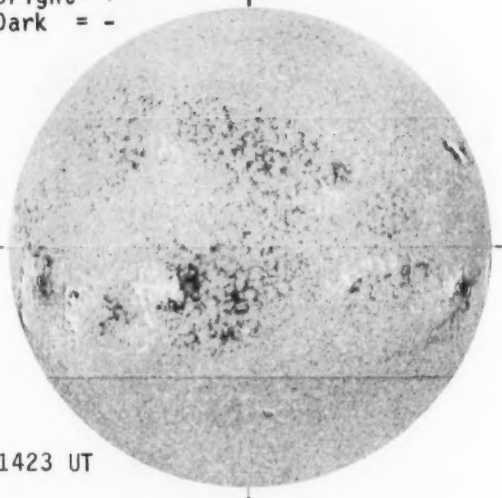
Sp

M A R C H 26, 1 9 8 3 (P=-25.77, B_O=-6.84, L_O= 212.93)

KITT PEAK MAGNETOGRAM

Np

Bright= +
Dark = -



E

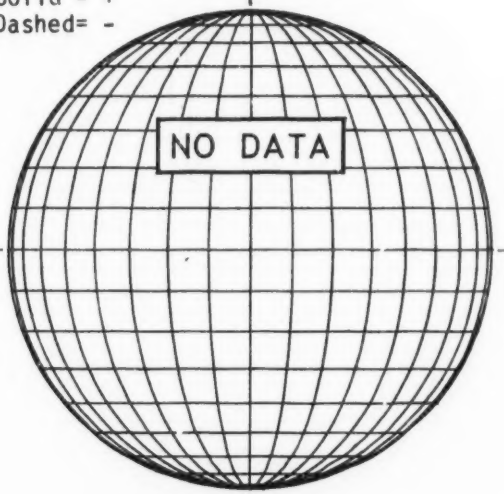
1423 UT

Sp

STANFORD MAGNETOGRAM

Np

Solid = +
Dashed= -



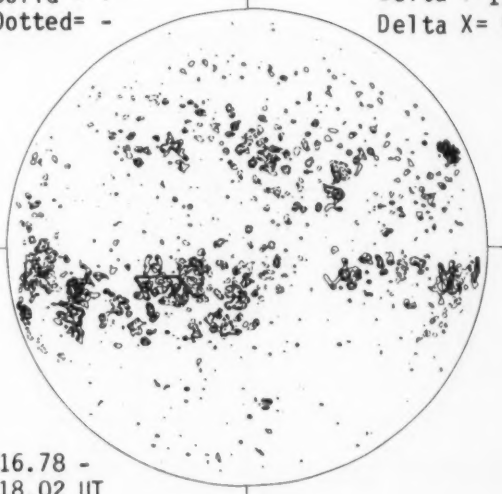
Sp

MT. WILSON MAGNETOGRAM

Np

Solid = +
Dotted= -

Delta Y=12.7
Delta X= 9.6



W

16.78 -
18.02 UT

Sp

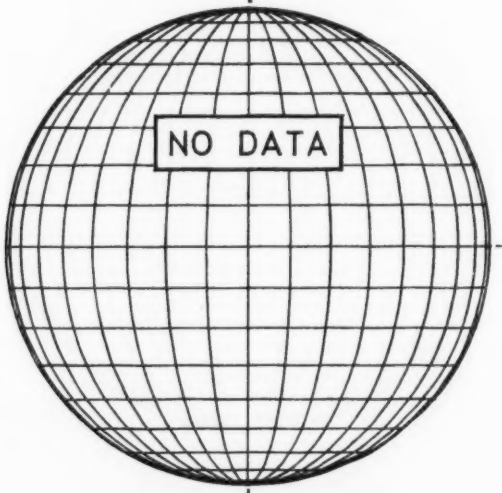
SAN FERNANDO H-ALPHA

E

2312 UT

Sp

BOULDER SUNSPOTS



Sp

SACRAMENTO PEAK CORONA (5303 Angstrom)

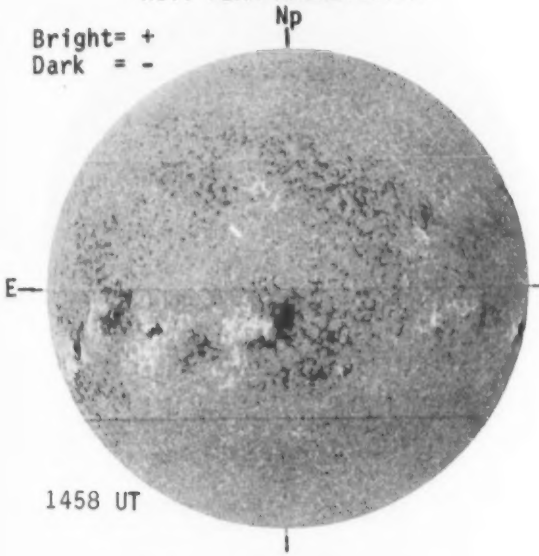
W

Sp

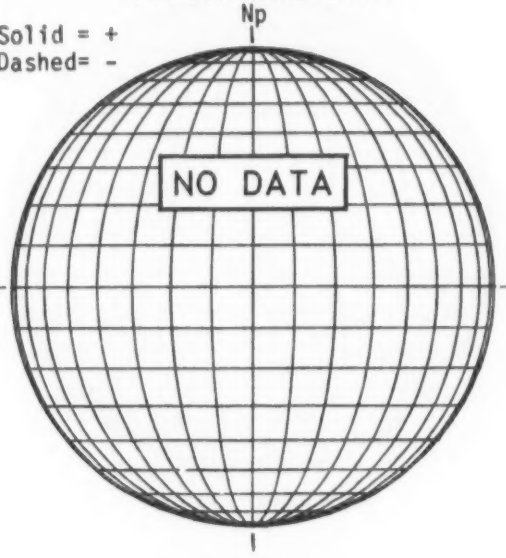
67
Mar 83

M A R C H 27, 1 9 8 3 (P=-25.86, B_o=-6.80, L_o= 199.74)

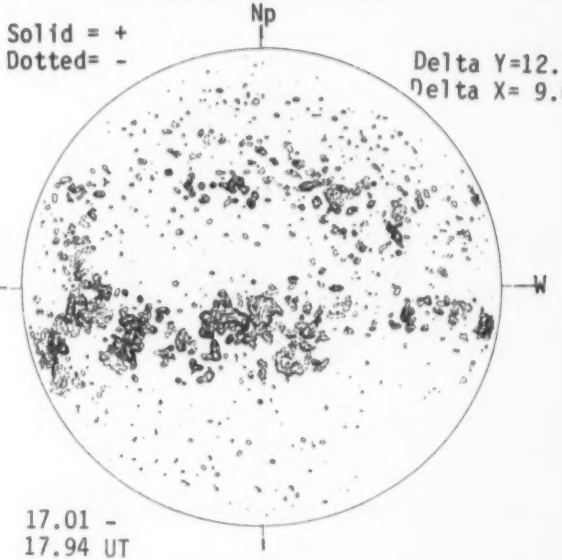
KITT PEAK MAGNETOGRAM



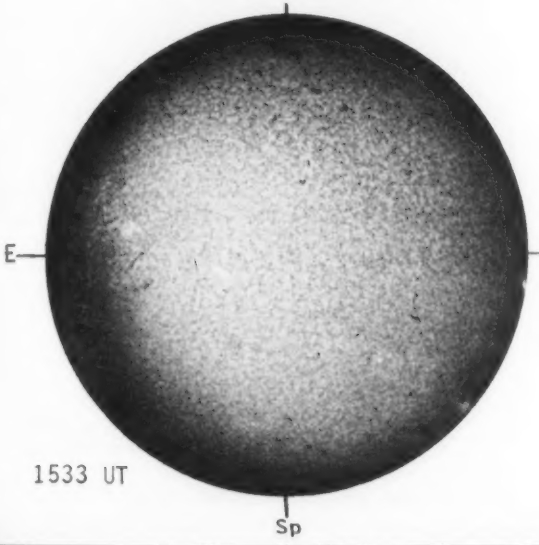
STANFORD MAGNETOGRAM



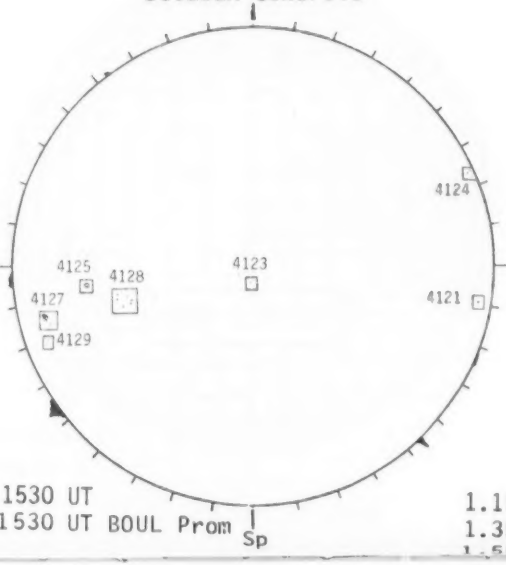
MT. WILSON MAGNETOGRAM



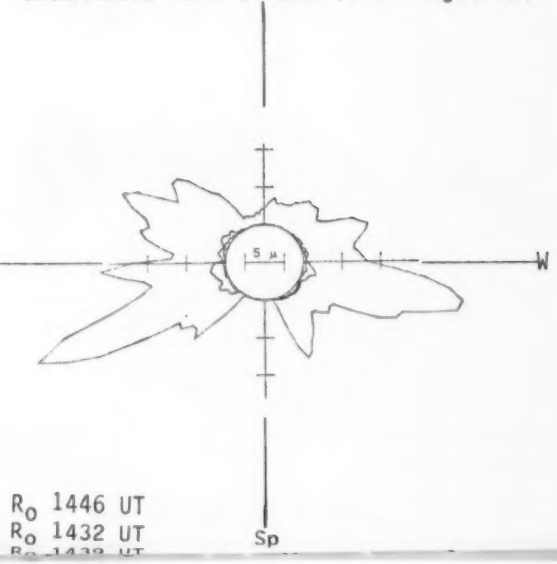
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (5303 Angstrom)



M A R C H 28, 1 9 8 3 (P=-25.93, B_o=-6.76, L_o= 186.55)

KITT PEAK MAGNETOGRAM

STANFORD MAGNETOGRAM

MT. WILSON MAGNETOGRAM

Sp

1530 UT BOUL Prom

Sp

1.15 R_o 1446 UT

1.35 R_o 1432 UT

1.55 R_o 1432 UT

Sp

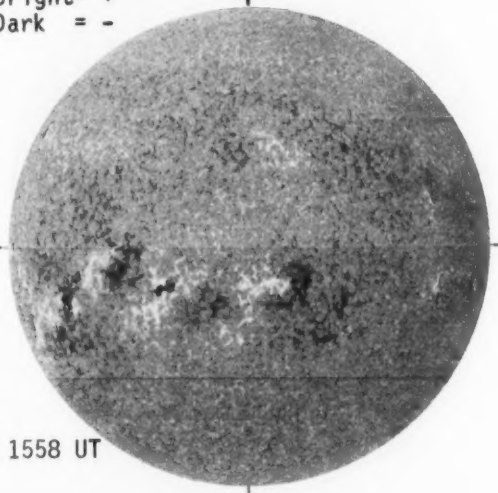
M A R C H 28, 1 9 8 3 (P=-25.93, B_o=-6.76, L_o= 186.55)

KITT PEAK MAGNETOGRAM

Np

Bright= +

Dark = -



E

1558 UT

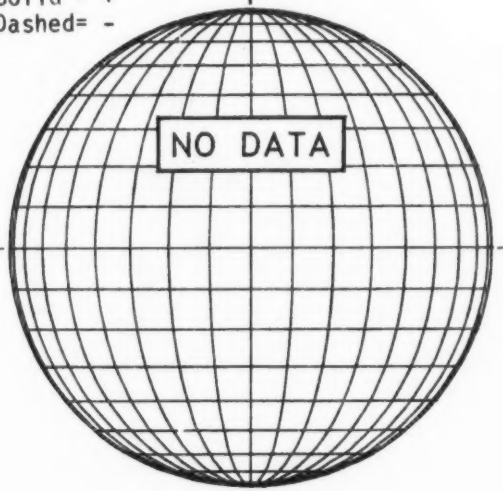
Sp

STANFORD MAGNETOGRAM

Np

Solid = +

Dashed= -



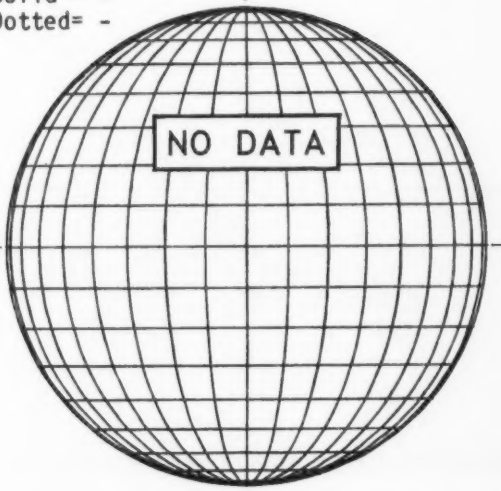
Sp

MT. WILSON MAGNETOGRAM

Np

Solid = +

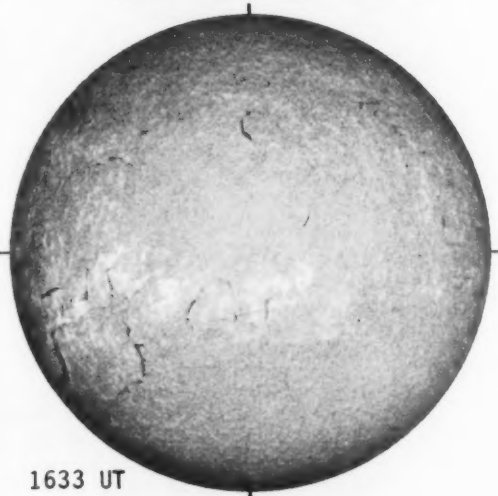
Dotted= -



W

Sp

SACRAMENTO PEAK H-ALPHA

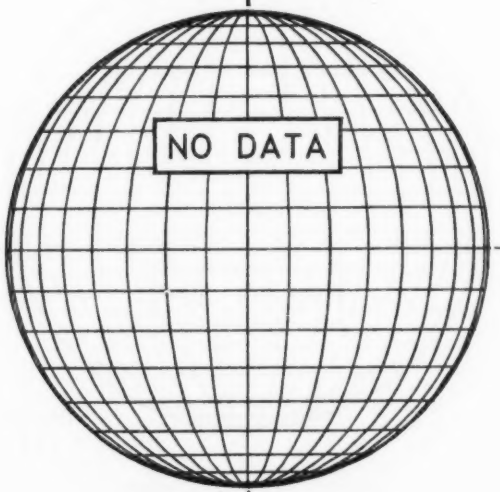


E

1633 UT

Sp

BOULDER SUNSPOTS



Sp

SACRAMENTO PEAK CORONA (5303 Angstrom)

W

Sp

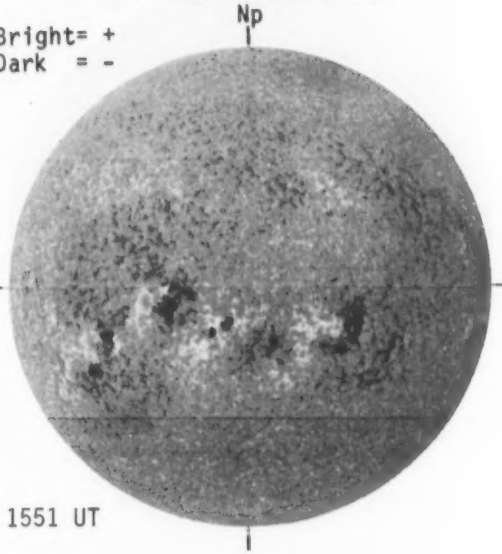
69

Mar 83

M A R C H 29, 1 9 8 3 (P=-26.00, B_o=-6.71, L_o= 173.36)

KITT PEAK MAGNETOGRAM

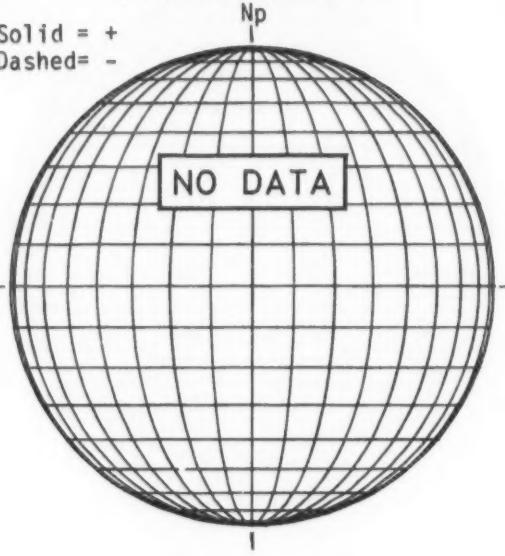
Bright= +
Dark = -



1551 UT

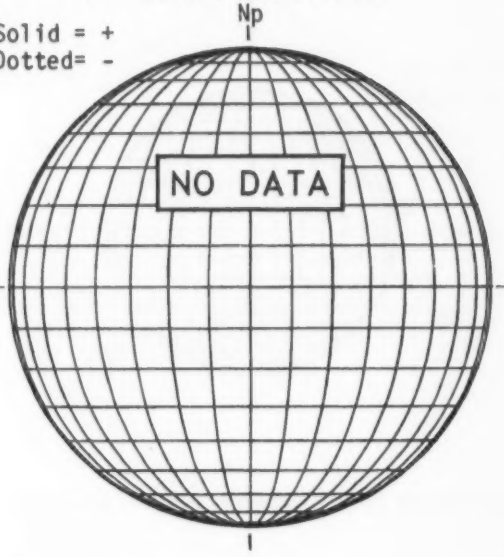
STANFORD MAGNETOGRAM

Solid = +
Dashed= -

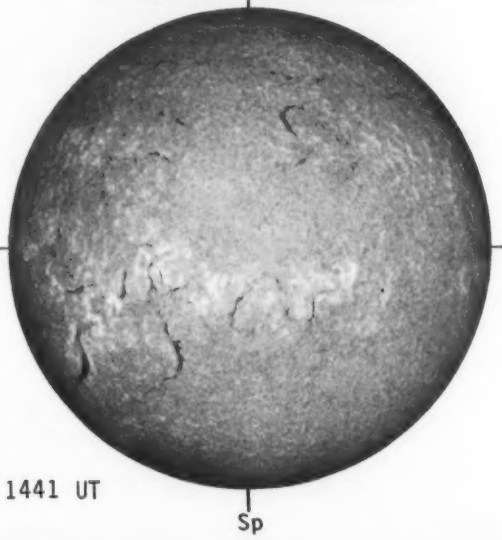


MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

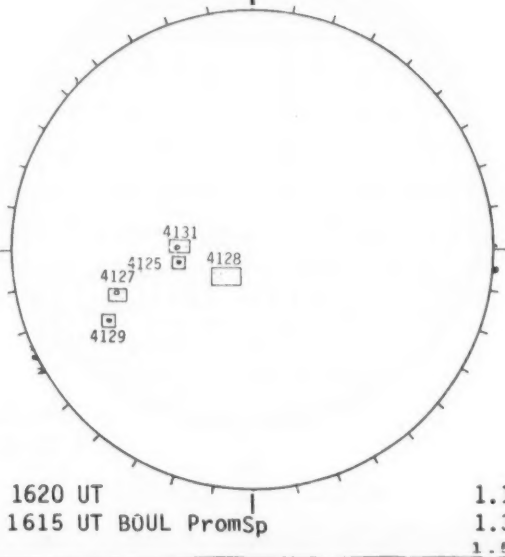


SACRAMENTO PEAK H-ALPHA



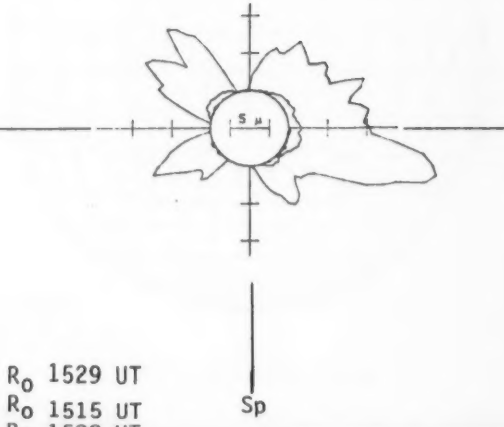
1441 UT

BOULDER SUNSPOTS



1620 UT
1615 UT BOUL PromSp

SACRAMENTO PEAK CORONA (5303 Angstrom)



1.15 R_o 1529 UT
1.35 R_o 1515 UT
1.55 R_o 1522 UT

M A R C H 30, 1 9 8 3 (P=-26.07, B_o=-6.66, L_o= 160.17)

1441 UT

Sp

1620 UT

1615 UT BOUL PromSp

1.15 R_o 1529 UT

1.35 R_o 1515 UT

1.55 R_o 1522 UT

Sp

M A R C H 30, 1 9 8 3 (P=-26.07, B_o=-6.66, L_o= 160.17)

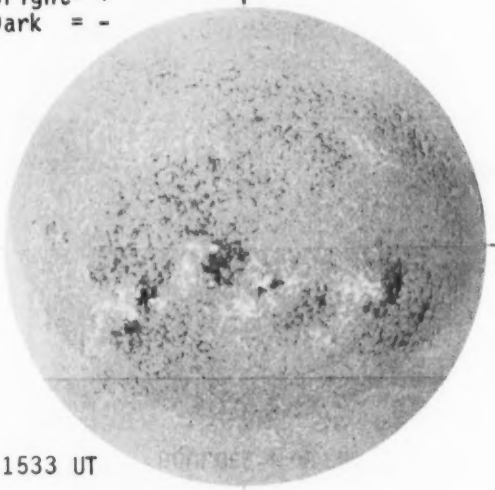
KITT PEAK MAGNETOGRAM

Np

Bright= +

Dark = -

E



1533 UT

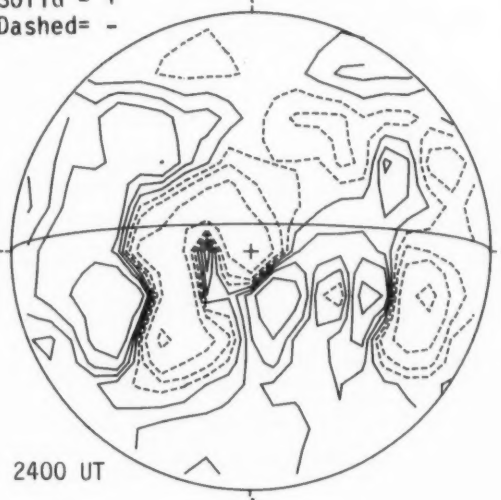
Sp

STANFORD MAGNETOGRAM

Np

Solid = +

Dashed= -



2400 UT

Sp

MT. WILSON MAGNETOGRAM

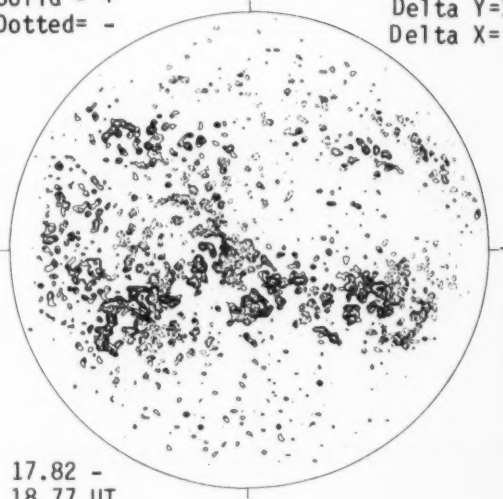
Np

Solid = +

Dotted= -

Delta Y=12.7

Delta X= 9.6



W

17.82 -

18.77 UT

Sp

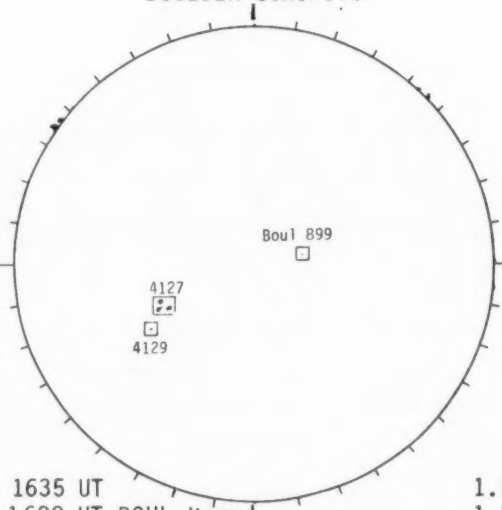
SACRAMENTO PEAK H-ALPHA

E

1436 UT

Sp

BOULDER SUNSPOTS

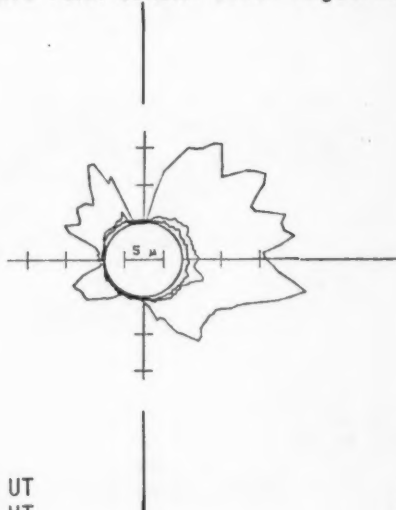


1635 UT

1620 UT BOUL Prom

Sp

SACRAMENTO PEAK CORONA (5303 Angstrom)



W

1.15 R_o 2126 UT

1.35 R_o 2132 UT

1.55 R_o 2106 UT

Sp

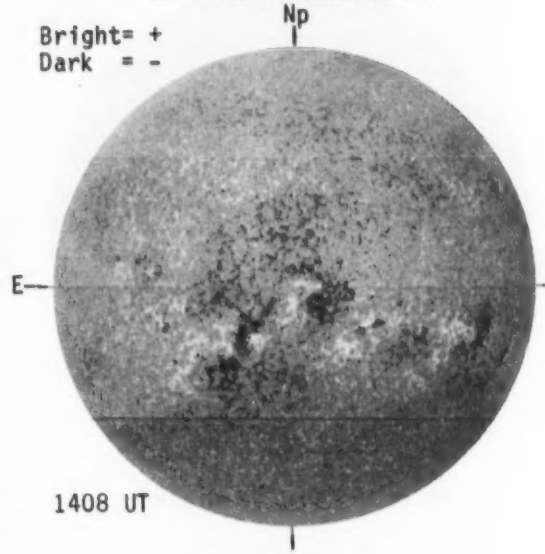
71

Mar 83

M A R C H 31, 1 9 8 3 (P=-26.13, B_o=-6.61, L_o= 146.98)

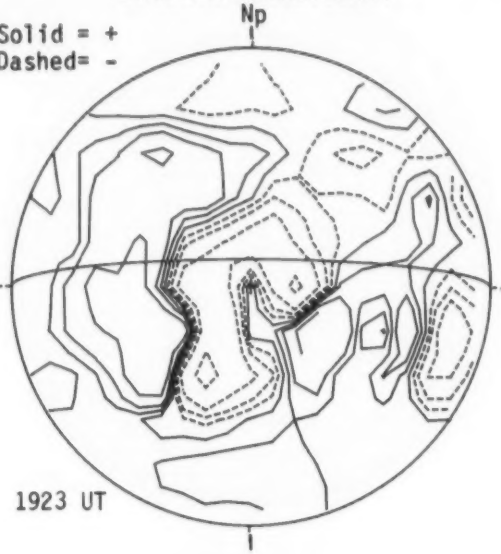
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

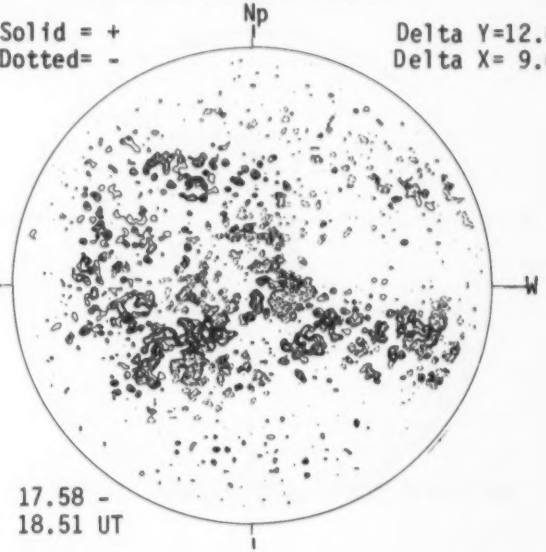
Solid = +
Dashed= -



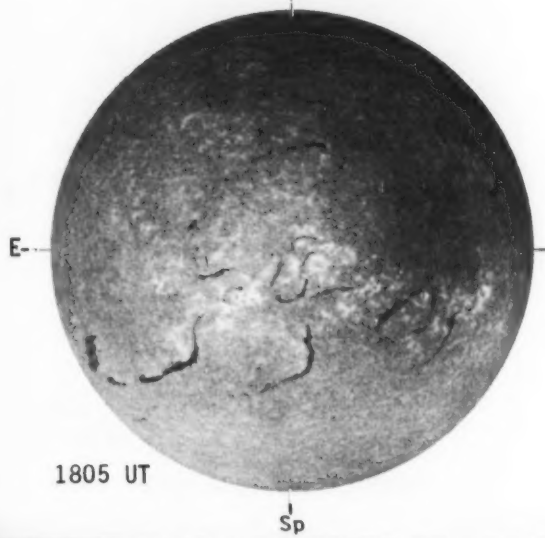
MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

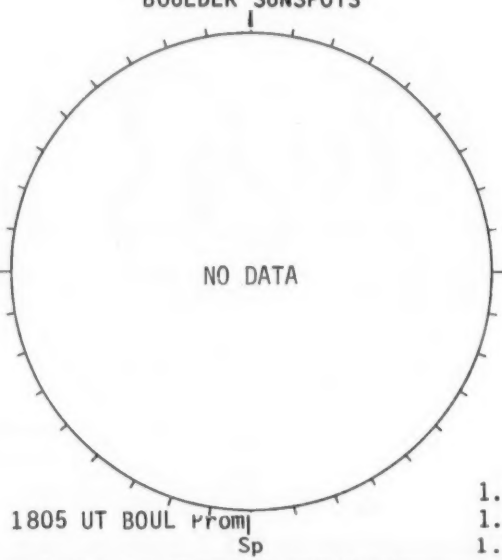
Delta Y=12.6
Delta X= 9.6



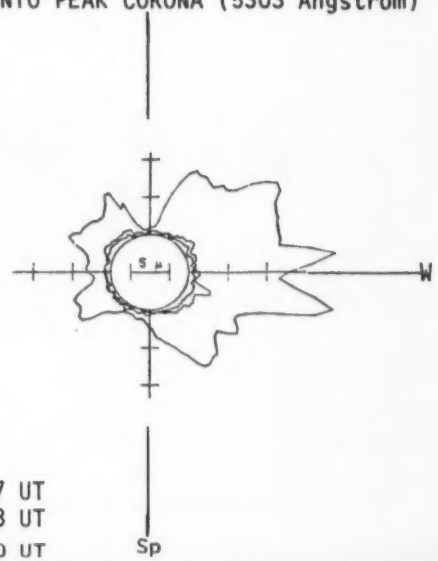
BOULDER H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (5303 Angstrom)



REGIONS OF SUNSPOT ACTIVITY
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

MARCH 1983

NOAA/ USAF Region	Mt Wilson Region	Sta	Observation Mo	Day	Time (UT)	Lat	CMD	CMP Mo	CMP Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
4103		HOLL	02	24	2216	S13	E54	03	1.0		B	BXO	10	2	3	3
4103		HOLL	02	27	1530	S16	E18	03	1.0		B	CRO	50	9	5	4
4103		BOUL	02	27	1700	S14	E17	03	1.0		B	CSO	30	7	3	4
4103		RAMY	02	27	1809	S15	E17	03	1.0		B	DAO	80	8	5	1
4103		PALE	02	27	1815	S15	E16	03	1.0		B	DRO	50	9	4	3
4103		LEAR	02	28	0015	S16	E13	03	1.0		B	CSO	20	9	4	3
4103		RAMY	02	28	1313	S16	E06	03	1.0		B	CSO	50	7	5	2
4103		BOUL	02	28	1520	S14	E04	02	28.9		B	BXO	20	4	3	3
4103		HOLL	02	28	1522	S15	E06	03	1.1		B	BXO	20	4	4	4
4103		PALE	02	28	1925	S14	E03	03	1.0		B	BXO	20	4	5	3
4103		LEAR	03	01	0125	S13	W01	03	1.0		B	BXO	40	5	4	3
4103		RAMY	03	01	1349	S12	W09	02	28.9		A	AXX	10	2	1	2
4103		RAMY	03	02	1415	S15	W19	03	1.2		A	AXX	10	2	1	3
4103		PALE	03	02	1829	S16	W21	03	1.2		B	BXO	10	2	1	4
4103	23577	MWIL	03	04	1600	S13	W46	03	1.2	3	(B)					
4103	23577	MWIL	03	05	1530	S13	W59	03	1.2	3	(BP)					
4103	23577	MWIL	03	06	1530	S13	W74	03	1.1	3	(AP)					
0001	23587	MWIL	03	05	1530	S18	W60	03	1.1	3	(B)					
0001	23587	MWIL	03	06	1530	S16	W73	03	1.1	3	(AP)					
4097		LEAR	02	23	0020	N17	E80	03	1.1		A	HSX	140	2	2	3
4097		RAMY	02	23	1248	N15	E75	03	1.2		A	HKX	130	1	5	2
4097		BOUL	02	23	1438	N17	E70	02	28.9		A	HSX	50	1	2	3
4097		HOLL	02	23	1540	N17	E74	03	1.3		B	DAO	190	5	8	3
4097		PALE	02	23	1919	N17	E74	03	1.4		B	CKO	190	7	12	4
4097		LEAR	02	24	0016	N17	E70	03	1.3		B	EAO	180	7	11	3
4097		RAMY	02	24	1345	N17	E63	03	1.4		B	EAO	330	7	11	2
4097		BOUL	02	24	1500	N17	E60	03	1.2		B	EAO	240	5	12	3
4097		PALE	02	24	1811	N16	E60	03	1.3		B	EAO	260	7	11	4
4097		HOLL	02	24	2216	N17	E59	03	1.4		B	DSO	180	5	10	3
4097		LEAR	02	25	0027	N15	E56	03	1.3		B	EHO	210	6	10	3
4097		BOUL	02	25	1535	N16	E47	03	1.2		B	EAO	190	6	11	3
4097		HOLL	02	25	1812	N16	E47	03	1.3		B	DAO	210	6	9	4
4097		PALE	02	25	1825	N16	E46	03	1.3		B	DAO	240	7	10	4
4097		LEAR	02	26	0018	N17	E44	03	1.4		B	DHO	210	6	10	2
4097		RAMY	02	26	1310	N16	E36	03	1.3		B	CKO	160	5	10	3
4097		BOUL	02	26	1615	N15	E33	03	1.2		B	EHO	180	5	10	3
4097		HOLL	02	26	1830	N15	E33	03	1.3		B	CAO	190	4	11	3
4097	23578	MWIL	02	26	1830	N16	E33	03	1.3	5	(B)					
4097		PALE	02	26	1901	N16	E32	03	1.2		B	EAO	160	5	11	3
4097		LEAR	02	27	0020	N16	E31	03	1.4		B	CKO	190	4	10	3
4097		HOLL	02	27	1530	N16	E17	02	28.9		B	DAO	130	2	3	4
4097		BOUL	02	27	1700	N15	E17	03	1.0		A	HHX	150	2	3	4
4097		RAMY	02	27	1809	N16	E17	03	1.0		A	HKX	160	2	3	1
4097		PALE	02	27	1815	N16	E17	03	1.1		A	HKX	110	2	3	3
4097		LEAR	02	28	0015	N14	E15	03	1.1		B	CSO	160	5	7	3
4097		RAMY	02	28	1313	N16	E07	03	1.1		B	CKO	170	5	6	2
4097		BOUL	02	28	1520	N15	E07	03	1.2		B	CHO	130	5	5	3
4097		HOLL	02	28	1522	N16	E07	03	1.2		B	CAO	190	5	7	4
4097		PALE	02	28	1925	N16	E04	03	1.1		B	CAO	100	3	5	3
4097		LEAR	03	01	0125	N16	E01	03	1.1		B	CAO	140	8	5	3
4097		RAMY	03	01	1349	N17	W08	03	1.0		B	CKO	140	4	3	2
4097		PALE	03	01	1815	N16	W09	03	1.1		B	CKO	110	10	4	4
4097		HOLL	03	01	1920	N16	W10	03	1.0		B	CKO	110	8	3	3
4097		MANI	03	02	0010	N17	W12	03	1.1			CAO	130	7	3	3
4097		RAMY	03	02	1415	N18	W20	03	1.1		B	CAO	90	5	2	3
4097		BOUL	03	02	1615	N16	W21	03	1.1		B	CSO	80	4	3	2
4097		PALE	03	02	1829	N17	W23	03	1.0		B	DAO	120	6	3	4
4097	23578	MWIL	03	04	1600	N16	W47	03	1.1	4	(AP)					
4097	23578	MWIL	03	05	1530	N16	W60	03	1.1	3	(AP)					
4097	23578	MWIL	03	06	1530	N15	W72	03	1.2	3	(AP)					
		PALE	03	02	1829	S20	W15	03	1.6		A	AXX	10	3	2	4
4098		RAMY	02	23	1248	S18	E85	03	2.0		B	CKO	20	2	7	2
4098		BOUL	02	23	1438	S16	E81	03	1.8		A	HRX	40	2	2	3
4098		HOLL	02	23	1540	S15	E78	03	1.6		B	DSO	60	2	4	3
4098		PALE	02	23	1919	S15	E78	03	1.7		B	DSO	40	3	3	4
4098		LEAR	02	24	0016	S16	E75	03	1.7		B	DSO	110	2	4	3
4098		RAMY	02	24	1345	S17	E66	03	1.6		B	DAO	50	2	3	2

REGIONS OF SUNSPOT ACTIVITY
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

MARCH 1983

NOAA/ USAF Region	Mt Wilson Region	Sta	Observation Mo	Day	Time (UT)	Lat CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
4098		BOUL	02	24	1500	S16 E67	03	1.7		B	DSO	90	4	4	3
4098		PALE	02	24	1811	S14 E60	03	1.3		B	CAO	60	6	11	4
4098		HOLL	02	24	2216	S15 E64	03	1.8		B	DSO	40	4	4	3
4098		LEAR	02	25	0027	S16 E62	03	1.7		B	CSO	20	2	3	3
4098		BOUL	02	25	1535	S16 E53	03	1.7		B	CRO	40	3	3	3
4098		HOLL	02	25	1812	S18 E52	03	1.7		B	CRO	20	2	4	4
4098		PALE	02	25	1825	S15 E47	03	1.3		B	CSO	50	3	11	4
4098		LEAR	02	26	0018	S16 E49	03	1.7		A	HSX	50	2	1	2
4098		RAMY	02	26	1310	S16 E40	03	1.6		B	CAO	30	3	4	3
4098		BOUL	02	26	1615	S16 E38	03	1.6		B	CRO	10	3	4	3
4098		HOLL	02	26	1830	S16 E37	03	1.6		B	BXO	10	3	4	3
4098	23579	MWIL	02	26	1830	S16 E38	03	1.7	4	(B)					
4098		PALE	02	26	1901	S16 E36	03	1.5		B	CRO	30	4	4	3
4098		LEAR	02	27	0020	S17 E34	03	1.6		B	CSO	50	5	6	3
4098		HOLL	02	27	1530	S15 E27	03	1.7		B	CRO	50	11	6	4
4098		BOUL	02	27	1700	S15 E25	03	1.6		B	CSO	30	6	2	4
4098		RAMY	02	27	1809	S14 E22	03	1.4		B	EAO	130	13	13	1
4098		PALE	02	27	1815	S15 E26	03	1.7		B	DRO	40	6	4	3
4098		LEAR	02	28	0015	S16 E22	03	1.7		B	DSI	70	12	8	3
4098		RAMY	02	28	1313	S15 E17	03	1.8		B	DSO	80	9	6	2
4098		BOUL	02	28	1520	S13 E13	03	1.6		B	CRI	50	8	4	3
4098		HOLL	02	28	1522	S15 E14	03	1.7		B	BXO	50	13	6	4
4098		PALE	02	28	1925	S15 E12	03	1.7		B	DRO	60	8	5	3
4098		LEAR	03	01	0125	S15 E07	03	1.6		B	BXO	50	12	8	3
4098		RAMY	03	01	1349	S15 E01	03	1.7		B	DSO	90	11	9	2
4098		PALE	03	01	1815	S15 W00	03	1.8		B	BXO	20	7	8	4
4098		HOLL	03	01	1920	S15 W01	03	1.7		B	BXO	20	6	7	3
4098		MANI	03	02	0010	S15 W05	03	1.6			BXO	30	4	7	3
4098		RAMY	03	02	1415	S14 W11	03	1.8		B	CAO	10	7	5	3
4098		BOUL	03	02	1615	S14 W13	03	1.7		B	BXO	10	4	4	2
4098		PALE	03	02	1829	S15 W10	03	2.0		B	BXO	10	3	3	4
4099		LEAR	02	24	0016	S18 E88	03	2.7		A	HHX	190	2	3	3
4099		RAMY	02	24	1345	S19 E78	03	2.5		A	HAX	250	1	2	2
4099		BOUL	02	24	1500	S18 E79	03	2.6		A	HSX	180	1	2	3
4099		PALE	02	24	1811	S17 E78	03	2.7		A	HHX	250	1	3	4
4099		HOLL	02	24	2216	S18 E77	03	2.8		A	HSX	200	1	2	3
4099		LEAR	02	25	0027	S18 E74	03	2.7		A	HHX	250	1	3	3
4099		BOUL	02	25	1535	S18 E66	03	2.7		A	HSX	170	1	2	3
4099		HOLL	02	25	1812	S18 E65	03	2.7		A	HHX	250	1	3	4
4099		PALE	02	25	1825	S18 E65	03	2.7		A	HHX	220	1	3	4
4099		LEAR	02	26	0018	S18 E62	03	2.7		A	HHX	250	1	3	2
4099		RAMY	02	26	1310	S18 E54	03	2.7		A	HKX	240	1	3	3
4099		BOUL	02	26	1615	S18 E52	03	2.6		A	HSX	190	1	3	3
4099	23580	MWIL	02	26	1830	S18 E52	03	2.7	5	(AF)					
4099		HOLL	02	26	1830	S19 E51	03	2.7		A	HHX	210	1	3	3
4099		PALE	02	26	1901	S18 E51	03	2.7		A	HSX	220	1	2	3
4099		LEAR	02	27	0020	S18 E48	03	2.7		A	HSX	160	1	2	3
4099		HOLL	02	27	1530	S18 E40	03	2.7		A	HSX	220	1	2	4
4099		BOUL	02	27	1700	S19 E39	03	2.7		A	HHX	120	1	3	4
4099		RAMY	02	27	1809	S19 E39	03	2.7		A	HHX	180	1	3	1
4099		PALE	02	27	1815	S18 E38	03	2.7		A	HHX	200	1	3	3
4099		LEAR	02	28	0015	S18 E36	03	2.8		A	HHX	360	1	3	3
4099		RAMY	02	28	1313	S19 E29	03	2.8		A	HKX	180	1	3	2
4099		BOUL	02	28	1520	S19 E27	03	2.7		A	HSX	210	2	3	3
4099		HOLL	02	28	1522	S18 E28	03	2.8		B	CHO	220	3	3	4
4099		PALE	02	28	1925	S19 E25	03	2.7		A	HHX	200	2	3	3
4099		LEAR	03	01	0125	S18 E22	03	2.7		A	HSX	220	1	2	3
4099		RAMY	03	01	1349	S19 E15	03	2.7		A	HHX	220	1	3	2
4099		PALE	03	01	1815	S18 E12	03	2.7		B	CAO	210	3	3	4
4099		HOLL	03	01	1920	S18 E13	03	2.8		A	HHX	190	2	3	3
4099		MANI	03	02	0010	S18 E10	03	2.8			HHX	210	2	3	3
4099		RAMY	03	02	1415	S18 E02	03	2.7		A	HKX	180	1	3	3
4099		BOUL	03	02	1615	S18 E00	03	2.7		A	HSX	190	1	2	2
4099		PALE	03	02	1829	S19 W00	03	2.8		A	HHX	230	2	3	4
4099	23580	MWIL	03	04	1600	S19 W25	03	2.8	5	(AF)					
4099	23580	MWIL	03	05	1530	S19 W37	03	2.8	5	(AF)					
4099	23580	MWIL	03	06	1530	S19 W50	03	2.8	4	(AF)					
4099	23580	MWIL	03	07	2300	S19 W67	03	2.8	4	(AF)					
4099		LEAR	03	08	0029	S18 W68	03	2.8		A	HSX	60	2	2	2
4099		RAMY	03	08	1315	S18 W74	03	2.9		A	HAX	160	2	2	3

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4099	23580	MWIL	03	08	1530	S19	W76	03	2.8	3	(AF)					
4099		BOUL	03	08	1540	S18	W77	03	2.8		A	HSX	150	3	3	2
4099		PALE	03	08	1730	S18	W78	03	2.8		B	CSO	80	3	2	3
4099		HOLL	03	08	1823	S18	W79	03	2.7		A	HSX	100	2	2	2
4099		LEAR	03	09	0048	S19	W79	03	3.0		A	HSX	100	2	1	3
0002	23582	MWIL	03	04	1600	S07	W14	03	3.6	4	(B)					
0002	23582	MWIL	03	05	1530	S07	W26	03	3.7	3	(AF)					
4105		HOLL	03	01	1920	S09	E42	03	5.0		A	AXX		1	1	3
4105		RAMY	03	02	1415	S08	E24	03	4.4		A	AXX	10	3	2	3
4105		BOUL	03	02	1615	S08	E23	03	4.4		B	BXO	10	6	3	2
4105		PALE	03	02	1829	S09	E22	03	4.4		B	BXO	20	9	5	4
4105	23583	MWIL	03	04	1600	S09	W04	03	4.4	5	(B)					
4105	23583	MWIL	03	05	1530	S09	W16	03	4.4	5	(B)					
4105	23583	MWIL	03	06	1530	S10	W29	03	4.5	5	(BY)					
4105	23583	MWIL	03	07	2300	S09	W47	03	4.4	5	(B)					
4105		LEAR	03	08	0029	S09	W48	03	4.4		B	ESO	240	8	12	2
4105		RAMY	03	08	1315	S07	W56	03	4.4		B	DKO	330	13	9	3
4105	23583	MWIL	03	08	1530	S08	W57	03	4.4	4	(B)					
4105		BOUL	03	08	1540	S10	W55	03	4.5		B	DAO	180	4	9	2
4105		PALE	03	08	1730	S09	W57	03	4.4		B	DAO	130	5	8	3
4105		HOLL	03	08	1823	S08	W58	03	4.4		B	DAO	200	6	10	2
4105		LEAR	03	09	0048	S09	W62	03	4.4		B	DSO	230	9	9	3
4105		ATHN	03	09	0600	S09	W68	03	4.1			HHX	110	1	4	4
4105		RAMY	03	09	1225	S07	W71	03	4.2		B	CAO	220	3	3	3
4105	23583	MWIL	03	09	1515	S08	W71	03	4.3	5	(BP)					
4105		BOUL	03	09	1515	S09	W71	03	4.3		A	HSX	120	1	2	3
4105		PALE	03	09	1830	S09	W72	03	4.4		B	CAO	130	3	10	4
4105		MANI	03	09	2310	S08	W78	03	4.1			HSX	150	2	2	3
4105		LEAR	03	10	0003	S08	W78	03	4.2		A	HSX	150	2	2	3
4105		ATHN	03	10	0600	S06	W79	03	4.3			HKX	150	1	3	2
4102		BOUL	02	26	1615	S15	E85	03	5.1		A	HSX	120	1	3	3
4102	23581	MWIL	02	26	1830	S15	E85	03	5.2	3	(AP)					
4102		HOLL	02	26	1830	S16	E82	03	5.0		A	HSX	210	1	2	3
4102		PALE	02	26	1901	S15	E83	03	5.1		A	HHX	170	1	3	3
4102		LEAR	02	27	0020	S16	E79	03	5.0		A	HSX	140	1	3	3
4102		HOLL	02	27	1530	S15	E73	03	5.2		B	DAO	280	5	10	4
4102		BOUL	02	27	1700	S18	E75	03	5.4		B	DHO	340	5	10	4
4102		RAMY	02	27	1809	S16	E75	03	5.4		B	DKO	560	4	10	1
4102		PALE	02	27	1815	S16	E72	03	5.2		B	DHO	360	6	10	3
4102		LEAR	02	28	0015	S17	E70	03	5.3		B	DSO	370	6	9	3
4102		RAMY	02	28	1313	S17	E65	03	5.5		B	EKO	650	5	11	2
4102		BOUL	02	28	1520	S18	E60	03	5.2		B	CSO	160	3	9	3
4102		HOLL	02	28	1522	S15	E59	03	5.1		B	CSO	150	4	3	4
4102		PALE	02	28	1925	S15	E59	03	5.3		B	CHO	200	4	8	3
4102		LEAR	03	01	0125	S14	E54	03	5.1		A	HHX	180	4	3	3
4102		LEAR	03	01	0125	S14	E54	03	5.1		A	HXX	180	4	3	3
4102		RAMY	03	01	1349	S16	E51	03	5.4		B	DKO	390	9	10	2
4102		PALE	03	01	1815	S14	E47	03	5.3		B	DSO	270	10	10	4
4102		HOLL	03	01	1920	S15	E44	03	5.1		B	DHO	160	3	4	3
4102		MANI	03	02	0010	S14	E41	03	5.1			DHO	200	6	3	3
4102		RAMY	03	02	1415	S16	E34	03	5.2		B	CKO	250	6	4	3
4102		BOUL	03	02	1615	S15	E33	03	5.2		B	CSO	130	6	7	2
4102		PALE	03	02	1829	S15	E34	03	5.3		B	DHO	260	12	9	4
4102	23581	MWIL	03	04	1600	S15	E05	03	5.0	5	(BP)					
4102	23581	MWIL	03	05	1530	S15	W06	03	5.2	5	(BP)					
4102	23581	MWIL	03	06	1530	S15	W27	03	4.6	5	(BP)					
4102	23581	MWIL	03	07	2300	S15	W37	03	5.2	5	(BY)					
4102		LEAR	03	08	0029	S15	W38	03	5.1		A	HSX	140	5	3	2
4102		RAMY	03	08	1315	S14	W45	03	5.1		B	DAO	160	8	3	3
4102	23581	MWIL	03	08	1530	S15	W46	03	5.2	5	(AP)					
4102		BOUL	03	08	1540	S15	W46	03	5.2		B	DSI	140	7	3	2
4102		PALE	03	08	1730	S15	W47	03	5.2		B	DSO	100	7	3	3
4102		HOLL	03	08	1823	S15	W48	03	5.1		A	HSX	120	6	3	2
4102		LEAR	03	09	0048	S15	W51	03	5.2		A	HSX	150	9	4	3
4102		ATHN	03	09	0600	S14	W54	03	5.2			HHO	130	4	4	4
4102		RAMY	03	09	1225	S14	W58	03	5.1		B	CAO	130	6	3	3
4102		BOUL	03	09	1515	S15	W59	03	5.2		B	CSO	60	4	4	3
4102	23581	MWIL	03	09	1515	S15	W59	03	5.2	5	(AP)					

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4102		PALE	03	09	1830	S15	W61	03	5.1		B	CSO	80	5	3	4
4102		MANI	03	09	2310	S15	W65	03	5.0			CSO	180	4	3	3
4102		LEAR	03	10	0003	S15	W65	03	5.1		A	HSX	110	2	2	3
4102		ATHN	03	10	0600	S15	W62	03	5.6			CKO	170	3	11	2
4102		RAMY	03	10	1220	S15	W72	03	5.1		B	CAO	100	4	4	4
4102		BOUL	03	10	1545	S15	W73	03	5.1		A	HSX	90	2	3	3
4102	23581	MWIL	03	10	1730	S15	W75	03	5.0	4	(AP)					
4102		PALE	03	10	1900	S15	W75	03	5.1		A	HSX	70	1	2	3
4102		MANI	03	10	2322	S15	W78	03	5.1			HSX	150	1	2	3
4102		MANI	03	11	0001	S15	W78	03	5.1			HSX	150	1	2	3
4102		LEAR	03	11	0017	S16	W78	03	5.1		A	HSX	140	3	3	3
4102		ATHN	03	11	0730	S16	W77	03	5.5			HRX	50	1	1	3
4102		HOLL	03	11	1445	S15	W87	03	5.0		A	AXX	20	1	1	3
4112		LEAR	03	09	0048	N25	W52	03	5.0		A	AXX		1		3
4112		RAMY	03	09	1225	N25	W58	03	5.0		A	AXX	10	1	1	3
4112	23589	MWIL	03	09	1515	N23	W60	03	5.0	3	(AP)					
4112		PALE	03	09	1830	N24	W63	03	4.9		A	AXX		1		4
4108	23584	MWIL	03	04	1600	S15	E14	03	5.7	4	(BP)					
4108	23584	MWIL	03	05	1530	S13	W00	03	5.6	3	(B)					
4108	23584	MWIL	03	06	1530	S15	W12	03	5.7	4	(B)					
4108		LEAR	03	08	0029	S13	W34	03	5.5		A	AXX	10	2	1	2
4104		RAMY	02	28	1313	S22	E71	03	6.0		A	AXX	10	1	2	2
4104		BOUL	02	28	1520	S22	E65	03	5.6		B	CSO	140	2	4	3
4104		HOLL	02	28	1522	S18	E68	03	5.8		B	CSO	180	5	8	4
4104		PALE	02	28	1925	S20	E65	03	5.8		B	DSO	160	4	8	3
4104		LEAR	03	01	0125	S19	E62	03	5.8		B	CSO	170	11	9	3
4104		RAMY	03	01	1349	S11	E59	03	6.0		B	CHO	550	11	6	2
4104		PALE	03	01	1815	S19	E54	03	5.9		B	DAO	410	17	9	4
4104		HOLL	03	01	1920	S17	E55	03	6.0		BD	EKI	420	30	11	3
4104		MANI	03	02	0010	S17	E52	03	6.0			DKO	460	17	9	3
4104		RAMY	03	02	1415	S20	E44	03	6.0		B	EAO	560	20	11	3
4104		BOUL	03	02	1615	S20	E42	03	5.9		B	DSI	260	14	10	2
4104		PALE	03	02	1829	S20	E43	03	6.1		B	DAI	470	26	9	4
4104	23585	MWIL	03	04	1600	S19	E14	03	5.7	6	(BY)					
4104	23585	MWIL	03	05	1530	S19	E03	03	5.9	5	(BP)					
4104	23585	MWIL	03	06	1530	S21	W09	03	6.0	5	(BP)					
4104	23585	MWIL	03	07	2300	S20	W29	03	5.7	5	(BP)					
4104		LEAR	03	08	0029	S19	W29	03	5.8		B	ESO	210	10	11	2
4104		RAMY	03	08	1315	S19	W38	03	5.7		BG	DAO	210	12	5	3
4104	23585	MWIL	03	08	1530	S20	W37	03	5.8	5	(BY)					
4104		BOUL	03	08	1540	S20	W38	03	5.7		BG	DSO	190	7	5	2
4104		PALE	03	08	1730	S20	W40	03	5.7		BG	DSO	150	8	4	3
4104		HOLL	03	08	1823	S20	W40	03	5.7		B	DSO	190	10	8	2
4104		HOLL	03	08	1823	S22	W33	03	6.2		A	AXX		2		2
4104		LEAR	03	09	0048	S20	W41	03	5.9		B	DSO	230	18	9	3
4104		ATHN	03	09	0600	S19	W46	03	5.7			DKO	160	6	9	4
4104		RAMY	03	09	1225	S19	W48	03	5.9		BG	DAO	190	19	9	3
4104		BOUL	03	09	1515	S20	W50	03	5.8		BG	DSI	140	15	9	3
4104	23585	MWIL	03	09	1515	S20	W53	03	5.6	5	(BY)					
4104		PALE	03	09	1830	S20	W51	03	5.9		B	DSO	170	16	10	4
4104		MANI	03	09	2310	S20	W54	03	5.8			DAO	240	17	10	3
4104		LEAR	03	10	0003	S20	W55	03	5.8		B	DSO	180	16	10	3
4104		ATHN	03	10	0600	S18	W54	03	6.1			DKO	210	66	9	2
4104		RAMY	03	10	1220	S20	W60	03	5.9		BG	EAO	150	8	11	4
4104		BOUL	03	10	1545	S20	W63	03	5.8		BG	DSI	140	21	10	3
4104	23585	MWIL	03	10	1730	S20	W63	03	5.9	4	(B)					
4104		PALE	03	10	1900	S20	W65	03	5.8		BG	DSO	160	10	10	3
4104		MANI	03	10	2322	S20	W67	03	5.8			DSO	210	12	10	3
4104		MANI	03	11	0001	S20	W67	03	5.9			DSO	210	12	10	3
4104		LEAR	03	11	0017	S20	W66	03	6.0		B	DSO	130	11	9	3
4104		ATHN	03	11	0730	S20	W69	03	6.0			DSO	140	3	10	3
4104		HOLL	03	11	1445	S21	W75	03	5.9		B	CSO	100	7	11	3
4104		BOUL	03	11	1530	S19	W76	03	5.8		B	DSO	120	10	10	2
4104	23585	MWIL	03	11	1800	S20	W76	03	5.9	3	B					
4104		LEAR	03	12	0013	S21	W79	03	5.9		B	DSO	60	5	9	3
	23586	MWIL	03	04	1600	S11	E25	03	6.5	3	(B)					
4110		RAMY	03	08	1315	S02	W08	03	8.0		B	DAO	40	8	3	3

REGIONS OF SUNSPOT ACTIVITY
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

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NOAA/ USAF Region	Mt Wilson Region	Sta	Observation Time Mo	Day	(UT)	Lat CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
4110	23588	MWIL	03	08	1530	S02 W08	03	8.0	4	(B)					
4110		BOUL	03	08	1540	S02 W09	03	8.0		B	DSI	60	8	4	2
4110		PALE	03	08	1730	S02 W09	03	8.1		B	DSO	50	6	3	3
4110		HOLL	03	08	1823	S02 W10	03	8.0		B	DAO	60	9	4	2
4110		LEAR	03	09	0048	S02 W13	03	8.1		B	DAI	90	17	4	3
4110		ATHN	03	09	0600	S02 W16	03	8.1			DKI	130	4	5	4
4110		RAMY	03	09	1225	S02 W20	03	8.0		B	DAO	180	14	5	3
4110	23588	MWIL	03	09	1515	S02 W21	03	8.1	5	(B)					
4110		BOUL	03	09	1515	S02 W22	03	8.0		B	DSO	130	9	5	3
4110		PALE	03	09	1830	S02 W23	03	8.1		B	DAO	200	22	5	4
4110		MANI	03	09	2310	S02 W27	03	7.9			DSO	240	11	6	3
4110		LEAR	03	10	0003	S02 W27	03	8.0		B	DSO	230	9	6	3
4110		ATHN	03	10	0600	S01 W27	03	8.2			DKO	230	7	6	2
4110		RAMY	03	10	1220	S02 W33	03	8.0		B	DAO	190	8	6	4
4110		BOUL	03	10	1545	S02 W35	03	8.0		B	DSO	200	11	7	3
4110	23588	MWIL	03	10	1730	S02 W36	03	8.0	4	(B)					
4110		PALE	03	10	1900	S02 W38	03	8.0		B	DSO	180	13	6	3
4110		MANI	03	10	2322	S02 W41	03	7.9			DSO	230	9	6	3
4110		MANI	03	11	0001	S02 W41	03	7.9			DSO	230	9	6	3
4110		LEAR	03	11	0017	S02 W41	03	7.9		B	DSO	220	13	9	3
4110		ATHN	03	11	0730	S02 W43	03	8.1			DSO	150	3	7	3
4110		HOLL	03	11	1445	S02 W49	03	8.0		B	DSO	110	7	6	3
4110		BOUL	03	11	1530	S01 W49	03	8.0		B	DSO	130	13	7	2
4110	23588	MWIL	03	11	1800	S02 W52	03	7.9	4	B					
4110		LEAR	03	12	0013	S02 W54	03	8.0		B	DSO	130	9	9	3
4110		ATHN	03	12	0625	S03 W58	03	7.9		B	CSO	30	2	5	3
4110	23588	MWIL	03	12	1645	S02 W65	03	7.8	3	(B)					
4110		HOLL	03	12	1805	S02 W67	03	7.7		B	CSO	40	3	7	3
4110		BOUL	03	12	1910	S02 W65	03	7.9		B	CSO	90	3	7	3
4110		MANI	03	12	2335	S02 W68	03	7.9			CRO	30	4	6	3
4110		LEAR	03	13	0412	S02 W69	03	8.0		A	HAX	20	1	1	2
4110		RAMY	03	13	1318	S01 W75	03	7.9		A	AXX	10	1	1	2
4110		HOLL	03	13	1437	S02 W76	03	7.9		A	AXX		1		2
4110	23588	MWIL	03	13	1630	S02 W77	03	7.9	3	(AP)					
4110		PALE	03	13	1900	S02 W77	03	8.0		A	AXX		1		4
4110		MANI	03	13	2316	S02 W80	03	8.0			AXX	10	1		3
4113		RAMY	03	10	1220	N06 W33	03	8.0		A	AXX	10	1	1	4
4113		BOUL	03	10	1545	N06 W36	03	8.0		B	BXO	10	4	4	3
4113	23591	MWIL	03	10	1730	N07 W37	03	8.0	3	(B)					
4113		PALE	03	10	1900	N07 W38	03	7.9		B	BXO	10	2	4	3
4113		MANI	03	10	2322	N07 W41	03	7.9			BXO	10	3	4	3
4113		MANI	03	11	0001	N07 W41	03	7.9			BXO	10	3	4	3
4113		HOLL	03	11	1445	N05 W52	03	7.7		A	AXX	10	1		3
4113		BOUL	03	11	1530	N07 W50	03	7.9		B	BXO	10	3	4	2
4113	23591	MWIL	03	11	1800	N05 W54	03	7.7	3	AP					
4113		LEAR	03	12	0013	N06 W56	03	7.8		B	BXO		2	3	3
4111		RAMY	03	09	1225	N12 E36	03	12.2		A	AXX	10	1	1	3
4111	23590	MWIL	03	09	1515	N11 E34	03	12.2	3	(B)					
4111		PALE	03	09	1830	N12 E32	03	12.2		B	BXO	20	4	3	4
4111		RAMY	03	10	1220	N10 E21	03	12.1		A	AXX	10	1	1	4
4114		BOUL	03	11	1530	S08 E07	03	12.2		A	AXX		1		2
4114	23592	MWIL	03	11	1800	S10 E07	03	12.3	2	B					
4114		LEAR	03	12	0013	S11 E03	03	12.2		B	BXO	40	10	3	3
4114		ATHN	03	12	0625	S10 E01	03	12.3		B	CRO	20	3	4	3
4114	23592	MWIL	03	12	1645	S10 W08	03	12.1	3	(B)					
4114		HOLL	03	12	1805	S10 W09	03	12.1		B	BXO	20	4	3	3
4114		BOUL	03	12	1910	S10 W09	03	12.1		B	BXO	30	4	5	3
4114		MANI	03	12	2335	S10 W10	03	12.2			AXX		1		3
4114		LEAR	03	13	0412	S10 W15	03	12.0		B	BXO	10	2	2	2
4114	23592	MWIL	03	13	1630	S10 W22	03	12.0	2	(B)					
4114		LEAR	03	14	0239	S10 W26	03	12.2		B	BXO	10	2	2	2
4117		MANI	03	14	2348	N20 W01	03	14.9			CRO	30	7	3	3
4117		PALE	03	14	2355	N20 W01	03	14.9		B	BXO	20	7	4	3
4117		LEAR	03	15	0057	N19 W01	03	15.0		B	CRO	20	10	3	3
4117		ATHN	03	15	0805	N18 W04	03	15.0		B	DSO	20	4	5	2
4117		HOLL	03	15	1507	N20 W09	03	14.9		B	BXO	30	6	4	4
4117	23595	MWIL	03	15	1630	N20 W11	03	14.8	4	(B)					

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4117		RAMY	03	15	1650	N20	W10	03	14.9		B	DAO	70	7	5	2
4117		PALE	03	15	2033	N20	W12	03	14.9		B	DAO	30	5	5	2
4117		LEAR	03	16	0018	N20	W15	03	14.9		B	DRO	50	7	5	3
4117		MANI	03	16	0220	N20	W15	03	14.9			DSO	50	9	6	3
4117		RAMY	03	16	1240	N20	W21	03	14.9		B	DAO	50	8	7	3
4117		HOLL	03	16	1702	N19	W25	03	14.8		B	DAO	40	7	8	2
4117	23595	MWIL	03	16	1730	N17	W25	03	14.8	4	(B)					
4117		PALE	03	16	1810	N20	W25	03	14.8		B	DAO	30	5	8	3
4117		LEAR	03	17	0014	N19	W28	03	14.9		B	CRO	20	4	8	3
4117		HOLL	03	17	1630	N19	W41	03	14.6		A	AXX	10	2	1	3
4117		LEAR	03	18	0025	N19	W42	03	14.8		B	BXO	10	2	6	3
4117		MANI	03	18	0049	N20	W43	03	14.7			BXO	20	3	8	3
4117		RAMY	03	18	1355	N13	W52	03	14.7		A	AXX	10	1	1	3
4117		HOLL	03	18	1540	N13	W53	03	14.7		A	AXX		1		2
4117		PALE	03	18	1930	N14	W55	03	14.7		A	HSX	30	1	1	4
4117		MANI	03	19	0001	N20	W56	03	14.7		A	AXX	10	1		3
4117		LEAR	03	19	0016	N14	W58	03	14.6		A	AXX		2	1	3
4115		LEAR	03	14	0239	S12	E64	03	18.9		B	BXO	10	2	2	2
4115		HOLL	03	14	1613	S13	E57	03	19.0		B	BXO	30	8	6	4
4115	23593	MWIL	03	14	1645	S12	E55	03	18.8	4	(AP)					
4115		MANI	03	14	2348	S13	E52	03	18.9			CAO	70	9	6	3
4115		PALE	03	14	2355	S13	E53	03	19.0		B	CSO	50	5	5	3
4115		LEAR	03	15	0057	S12	E51	03	18.9		B	CAO	60	7	5	3
4115		ATHN	03	15	0805	S14	E48	03	19.0		B	CSO	60	3	3	2
4115		HOLL	03	15	1507	S12	E43	03	18.9		B	DSI	170	22	7	4
4115	23593	MWIL	03	15	1630	S12	E42	03	18.9	5	(B)					
4115		RAMY	03	15	1650	S15	E43	03	19.0		B	DAO	160	10	6	2
4115		PALE	03	15	2033	S13	E41	03	19.0		B	DSO	110	7	6	2
4115		LEAR	03	16	0018	S12	E38	03	18.9		B	DAI	280	26	7	3
4115		MANI	03	16	0220	S13	E38	03	19.0			DSO	190	16	6	3
4115		RAMY	03	16	1240	S14	E33	03	19.0		B	DKO	260	21	7	3
4115		HOLL	03	16	1702	S12	E30	03	19.0		B	DKI	360	32	7	2
4115	23593	MWIL	03	16	1730	S13	E28	03	18.8	5	(D)					
4115		PALE	03	16	1810	S13	E29	03	18.9		B	DKI	380	29	8	3
4115		LEAR	03	17	0014	S13	E25	03	18.9		B	DKO	420	31	7	3
4115		HOLL	03	17	1630	S13	E17	03	19.0		B	DKI	350	29	7	3
4115		LEAR	03	18	0025	S13	E14	03	19.1		B	DKI	370	22	8	3
4115		MANI	03	18	0049	S13	E13	03	19.0			DKI	550	33	8	3
4115		RAMY	03	18	1355	S13	E07	03	19.1		B	EKI	440	39	9	3
4115		HOLL	03	18	1540	S12	E04	03	19.0		B	DAI	340	26	7	2
4115		PALE	03	18	1930	S13	E03	03	19.0		B	DAI	350	30	8	4
4115		MANI	03	18	2336	S12	W00	03	19.0			DKI	560	30	8	3
4115		MANI	03	19	0001	S12	W00	03	19.0		B	DKI	560	30	8	3
4115		LEAR	03	19	0016	S12	E01	03	19.1		B	DHI	320	48	8	3
4115		ATHN	03	19	1016	S13	W04	03	19.1		B	DKC	350	30	8	2
4115	23593	MWIL	03	19	1745	S12	W09	03	19.1	5	(D)					
4115		PALE	03	19	2245	S12	W11	03	19.1		BG	DKI	610	38	8	3
4115		MANI	03	20	0005	S12	W13	03	19.0			DKC	650	39	8	3
4115		LEAR	03	20	0008	S13	W13	03	19.0		BD	DKI	620	54	9	3
4115		ATHN	03	20	0600	S13	W13	03	19.3			DKO	540	21	9	2
4115		RAMY	03	20	1200	S13	W20	03	19.0		BGD	DKI	600	44	9	3
4115		HOLL	03	20	1452	S12	W21	03	19.0		BGD	DKI	730	28	9	2
4115		PALE	03	20	1804	S12	W22	03	19.1		BGD	DKC	640	57	8	5
4115		MANI	03	20	2255	S13	W26	03	19.0			DKC	770	41	8	3
4115		LEAR	03	21	0018	S12	W26	03	19.1		BD	DKC	690	53	8	3
4115		ATHN	03	21	0645	S12	W30	03	19.0			DKI	540	19	9	3
4115		RAMY	03	21	1210	S11	W34	03	18.9		BGD	EKI	530	42	11	4
4115		HOLL	03	21	1540	S11	W36	03	18.9		BGD	DKI	580	27	9	4
4115		BOUL	03	21	1610	S12	W35	03	19.0		BGD	DKI	550	41	8	3
4115		PALE	03	21	1820	S12	W36	03	19.0		BGD	DKI	420	41	8	3
4115		LEAR	03	22	0016	S12	W40	03	19.0		B	DKI	560	28	8	3
4115		MANI	03	22	0120	S12	W40	03	19.0			DKC	600	29	8	3
4115		ATHN	03	22	0700	S12	W39	03	19.4			DKI	550	23	9	3
4115		RAMY	03	22	1210	S12	W47	03	19.0		BGD	DKI	440	23	8	3
4115		BOUL	03	22	1625	S10	W49	03	19.0		BGD	DKI	630	32	10	2
4115		PALE	03	22	1855	S12	W50	03	19.0		BGD	DKI	520	18	7	3
4115		MANI	03	23	0025	S12	W54	03	18.9			DKC	370	19	8	3
4115		LEAR	03	23	0043	S11	W54	03	19.0		B	DKO	410	17	8	3
4115		ATHN	03	23	0700	S11	W58	03	18.9			DKI	540	6	8	3
4115		RAMY	03	23	1235	S12	W60	03	19.0		BGD	DKI	430	18	9	3

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4115	23593	MWIL	03	23	1500	S12	W61	03	19.0	4	(D)					
4115		PALE	03	23	1810	S11	W64	03	18.9		BGD	DKI	550	17	8	3
4115		HOLL	03	23	2110	S11	W64	03	19.1		BGD	DKI	280	10	8	2
4115		MANI	03	24	0010	S12	W69	03	18.8			DKC	650	9	8	3
4115		LEAR	03	24	0042	S11	W67	03	19.0		B	DKO	250	7	5	3
4115		ATHN	03	24	0600	S11	W71	03	18.9			DKI	410	11	8	3
4115		RAMY	03	24	1200	S12	W75	03	18.8		BGD	DKO	180	10	7	3
4115		HOLL	03	24	1447	S11	W78	03	18.7		BD	DAO	150	6	6	4
4115	23593	MWIL	03	24	1500	S12	W75	03	19.0	4	(BP)					
4115		PALE	03	24	1810	S11	W79	03	18.8		BD	DAO	160	6	6	4
4115		MANI	03	24	2336	S11	W82	03	18.8			DAO	590	7	6	3
4115		LEAR	03	25	0905	S11	W86	03	18.9		B	DSO	60	2	5	3
4119		LEAR	03	18	0025	N12	E16	03	19.2		B	BXO	20	4	3	3
4119		MANI	03	18	0049	N11	E16	03	19.2			BXX	10	2	1	3
4119		RAMY	03	18	1355	N11	E07	03	19.1		A	AXX	10	1	1	3
4119		HOLL	03	18	1540	N12	E07	03	19.2		B	BXO	10	2	3	2
4119		PALE	03	18	1930	N11	E05	03	19.2		A	AXX	10	1		4
4119		MANI	03	18	2336	N11	E02	03	19.1			AXX		1		3
4116		HOLL	03	14	1613	S07	E77	03	20.4		B	DSO	130	5	5	4
4116	23594	MWIL	03	14	1645	S05	E79	03	20.6	4	(B)					
4116		MANI	03	14	2348	S07	E74	03	20.5			DAO	190	10	10	3
4116		PALE	03	14	2355	S07	E76	03	20.7		B	CSO	100	6	12	3
4116		LEAR	03	15	0057	S06	E75	03	20.7		B	DAO	160	13	11	3
4116		ATHN	03	15	0805	S07	E75	03	21.0		B	DKO	160	5	8	2
4116		HOLL	03	15	1507	S07	E68	03	20.7		B	ESO	180	9	12	4
4116	23594	MWIL	03	15	1630	S06	E65	03	20.6	4	(B)					
4116		RAMY	03	15	1650	S08	E69	03	20.9		B	EAO	210	8	11	2
4116		PALE	03	15	2033	S07	E65	03	20.7		B	ESO	160	8	11	2
4116		LEAR	03	16	0018	S05	E63	03	20.7		B	EAO	230	21	12	3
4116		MANI	03	16	0220	S07	E63	03	20.8			EAO	290	19	12	3
4116		RAMY	03	16	1240	S07	E56	03	20.7		BG	EKO	20	18	11	3
4116		HOLL	03	16	1702	S05	E55	03	20.8		B	EAO	350	17	11	2
4116	23594	MWIL	03	16	1730	S06	E53	03	20.7	5	(B)					
4116		PALE	03	16	1810	S07	E53	03	20.7		B	EAO	360	15	13	3
4116		LEAR	03	17	0014	S05	E50	03	20.8		B	EAO	330	18	11	3
4116		HOLL	03	17	1630	S06	E41	03	20.8		BG	EAI	340	27	12	3
4116		LEAR	03	18	0025	S05	E38	03	20.9		B	EHO	360	21	12	3
4116		MANI	03	18	0049	S07	E37	03	20.8			EAI	340	22	13	3
4116		RAMY	03	18	1355	S08	E30	03	20.8		BG	EAO	340	21	12	3
4116		HOLL	03	18	1540	S06	E28	03	20.7		BG	CSO	220	20	12	2
4116		PALE	03	18	1930	S07	E27	03	20.8		B	CSO	190	20	12	4
4116		MANI	03	18	2336	S07	E23	03	20.7			EHO	190	20	14	3
4116		MANI	03	19	0001	S07	E23	03	20.7		BG	EHO	190	20	14	3
4116		LEAR	03	19	0016	S06	E25	03	20.9		BG	EAO	270	23	13	3
4116		ATHN	03	19	1016	S08	E17	03	20.7		B	CHO	110	6	8	2
4116	23594	MWIL	03	19	1745	S06	E12	03	20.6	5	(BP)					
4116		PALE	03	19	2245	S07	E11	03	20.8		B	DSO	220	15	10	3
4116		MANI	03	20	0005	S07	E09	03	20.7			CHO	190	9	7	3
4116		LEAR	03	20	0008	S07	E12	03	20.9		BG	EHO	280	23	12	3
4116		ATHN	03	20	0600	S07	E03	03	20.5			CHO	120	3	4	2
4116		RAMY	03	20	1200	S07	E01	03	20.6		BG	DHO	210	15	10	3
4116		HOLL	03	20	1452	S07	W00	03	20.6		B	CSO	240	11	9	2
4116		PALE	03	20	1804	S03	W03	03	20.5		B	CHO	220	19	10	5
4116		MANI	03	20	2255	S07	W05	03	20.6			CHO	250	15	10	3
4116		LEAR	03	21	0018	S07	W06	03	20.6		B	CHO	270	21	10	3
4116		ATHN	03	21	0645	S08	W10	03	20.5			CHO	240	6	8	3
4116		RAMY	03	21	1210	S07	W11	03	20.7		BG	EKO	230	13	11	4
4116		HOLL	03	21	1540	S07	W12	03	20.8		BG	ESO	230	18	11	4
4116		BOUL	03	21	1610	S07	W12	03	20.8		BG	CHO	180	16	11	3
4116		PALE	03	21	1820	S08	W14	03	20.7		B	CSO	170	16	11	3
4116		LEAR	03	22	0016	S08	W18	03	20.7		B	CHO	230	8	10	3
4116		MANI	03	22	0120	S07	W18	03	20.7			CHO	230	10	10	3
4116		ATHN	03	22	0700	S07	W22	03	20.6			CHO	100	3	3	3
4116		RAMY	03	22	1210	S07	W28	03	20.4		BG	CKO	130	5	4	3
4116		BOUL	03	22	1625	S05	W29	03	20.5		A	HSX	150	2	2	2
4116		PALE	03	22	1855	S06	W28	03	20.7		B	CSO	200	7	9	3
4116		MANI	03	23	0025	S07	W31	03	20.7			CHO	170	5	9	3
4116		LEAR	03	23	0043	S06	W30	03	20.8		B	CSO	200	8	9	3
4116		ATHN	03	23	0700	S08	W38	03	20.4			HHO	220	2	4	3

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NOAA/ USAF Region	Mt Wilson Region	Sta	Observation Time Mo	Day	(UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
4116		RAMY	03	23	1235	S07	W36	03	20.8		B	CKO	190	8	8	3
4116	23594	MWIL	03	23	1500	S07	W40	03	20.6	5	(BP)					
4116		PALE	03	23	1810	S07	W40	03	20.8		B	CHO	180	7	8	3
4116		HOLL	03	23	2110	S06	W42	03	20.7		B	CSO	180	3	8	2
4116		MANI	03	24	0010	S07	W45	03	20.6			CHO	280	6	8	3
4116		LEAR	03	24	0042	S06	W45	03	20.7		B	CSO	180	5	8	3
4116		ATHN	03	24	0600	S07	W48	03	20.7			HHO	200	2	6	3
4116		RAMY	03	24	1200	S07	W55	03	20.4		BG	CKO	160	2	4	3
4116		HOLL	03	24	1447	S07	W52	03	20.7		B	CSO	180	3	6	4
4116	23594	MWIL	03	24	1500	S07	W54	03	20.6	4	(B)					
4116		PALE	03	24	1810	S07	W54	03	20.7		B	CSO	170	5	8	4
4116		MANI	03	24	2336	S07	W58	03	20.6			CSO	240	5	8	3
4116		ATHN	03	25	0900	S09	W64	03	20.6			CKO	240	3	6	2
4116		LEAR	03	25	0905	S08	W62	03	20.7		B	CSO	140	3	7	3
4116		RAMY	03	25	1255	S07	W64	03	20.7		B	CAO	140	4	7	3
4116	23594	MWIL	03	25	1530	S07	W68	03	20.5	4	(BP)					
4116		HOLL	03	25	1605	S08	W68	03	20.6		B	CSO	70	3	5	3
4116		PALE	03	25	1849	S08	W70	03	20.5		B	CSO	140	3	7	4
4116		MANI	03	25	2305	S07	W71	03	20.6			CSO	170	3	6	3
4116		RAMY	03	26	1215	S06	W78	03	20.7		A	HAX	180	1	2	4
4116		HOLL	03	26	1448	S08	W82	03	20.5		A	HSX	60	1	2	2
4116	23594	MWIL	03	26	1600	S07	W80	03	20.7	4	(AP)					
4116		PALE	03	26	1816	S07	W89	03	20.1		A	HSX	100	1	2	3
4116		MANI	03	26	2312	S07	W89	03	20.3			HSX	420	1	2	3
4118		HOLL	03	15	1507	S11	E79	03	21.6		A	HSX	30	1	1	4
4118	23596A	MWIL	03	15	1630	S10	E79	03	21.6	3	(AP)					
4118		RAMY	03	15	1650	S14	E79	03	21.7		A	HAX	60	1	1	2
4118		PALE	03	15	2033	S12	E77	03	21.7		A	HSX	30	1	2	2
4118		LEAR	03	16	0018	S10	E76	03	21.7		A	HRX	20	1	1	3
4118		MANI	03	16	0220	S12	E74	03	21.7			HSX	90	1	2	3
4118		RAMY	03	16	1240	S12	E68	03	21.7		A	HAX	50	1	1	3
4118		HOLL	03	16	1702	S10	E65	03	21.6		A	HAX	30	1	1	2
4118	23596A	MWIL	03	16	1730	S11	E66	03	21.7	3	(AP)					
4118		PALE	03	16	1810	S11	E65	03	21.7		A	HAX	30	1	1	3
4118		LEAR	03	17	0014	S11	E61	03	21.6		A	HSX	50	1	1	3
4118		HOLL	03	17	1630	S11	E52	03	21.6		A	HSX	40	1	1	3
4118		LEAR	03	18	0025	S11	E48	03	21.6		A	HSX	30	1	1	3
4118		MANI	03	18	0049	S11	E49	03	21.7			HSX	60	1	1	3
4118		RAMY	03	18	1355	S11	E41	03	21.7		A	HSX	30	1	1	3
4118		HOLL	03	18	1540	S11	E39	03	21.6		A	HSX	20	1	1	2
4118		PALE	03	18	1930	S12	E38	03	21.7		A	HSX	20	1	1	4
4118		MANI	03	18	2336	S11	E36	03	21.7			HSX	40	1	1	3
4118		MANI	03	19	0001	S11	E36	03	21.7		A	HSX	40	1	1	3
4118		LEAR	03	19	0016	S10	E36	03	21.7		A	HSX	30	1	1	3
4118		ATHN	03	19	1016	S11	E31	03	21.8		A	HSX	20	3	1	2
4118	23596A	MWIL	03	19	1745	S11	E26	03	21.7	4	(AP)					
4118		PALE	03	19	2245	S12	E23	03	21.7		A	HSX	20	2	2	3
4118		MANI	03	20	0005	S11	E22	03	21.7			HRX	30	1	1	3
4118		LEAR	03	20	0008	S11	E22	03	21.7		A	HSX	20	1	1	3
4118		ATHN	03	20	0600	S12	E19	03	21.7			HSX	30	1	2	2
4118		RAMY	03	20	1200	S11	E15	03	21.6		B	CAO	10	2	1	3
4118		HOLL	03	20	1452	S11	E14	03	21.7		A	HRX	20	1	2	2
4118		PALE	03	20	1804	S11	E13	03	21.7		A	HSX	20	1	1	5
4118		MANI	03	20	2255	S11	E10	03	21.7			HSX	30	1	1	3
4118		LEAR	03	21	0018	S11	E09	03	21.7		A	HRX	10	1	1	3
4118		ATHN	03	21	0645	S11	E06	03	21.7			AXX	20	1	1	3
4118		RAMY	03	21	1210	S11	E03	03	21.7		A	HRX	20	1	1	4
4118		HOLL	03	21	1540	S11	W00	03	21.7		A	HSX	10	1	1	4
4118		BOUL	03	21	1610	S10	E00	03	21.7		A	HRX	20	1	1	3
4118		PALE	03	21	1820	S12	W02	03	21.6		A	HRX	10	1	1	3
4118		LEAR	03	22	0016	S11	W05	03	21.6		A	HRX	10	1	1	3
4118		MANI	03	22	0120	S11	W05	03	21.7			HRX	20	1	1	3
4118		RAMY	03	22	1210	S11	W11	03	21.7		A	HAX	20	2	1	3
4118		PALE	03	22	1855	S11	W15	03	21.7		A	HRX	20	1	1	3
4118		MANI	03	23	0025	S11	W18	03	21.7			HRX	10	1		3
4118		LEAR	03	23	0043	S11	W18	03	21.7		A	AXX		1	1	3
4118		ATHN	03	23	0700	S11	W20	03	21.8			AXX	10	1		3
4118		RAMY	03	23	1235	S10	W25	03	21.6		A	HRX	20	1	1	3
4118		PALE	03	23	1810	S11	W28	03	21.6		A	HRX	10	1	1	3
4118		HOLL	03	23	2110	S11	W29	03	21.7		A	AXX		1	1	2

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4118		MANI	03	24	0010	S11	W32	03	21.6			HRX	10	1	2	3
4118		LEAR	03	24	0042	S11	W32	03	21.6		A	AXX		1	1	3
4118		ATHN	03	24	0600	S11	W34	03	21.7			AXX	10	1		3
4118		HOLL	03	24	1447	S11	W40	03	21.6		A	AXX	10	1		4
4118		PALE	03	24	1810	S11	W42	03	21.6		A	AXX		1		4
4118		MANI	03	24	2336	S11	W45	03	21.6			AXX	10	1		3
4124		RAMY	03	24	1200	N21	W35	03	21.8		A	HAX	30	2	1	3
4124		HOLL	03	24	1447	N21	W36	03	21.9		B	BXO	20	4	3	4
4124	23598	MWIL	03	24	1500	N20	W36	03	21.9	3	(BP)					
4124		PALE	03	24	1810	N21	W38	03	21.8		B	BXO	30	6	4	4
4124		MANI	03	24	2336	N21	W41	03	21.8			BXO	20	6	4	3
4124		LEAR	03	25	0905	N21	W47	03	21.8		B	CRO	20	5	6	3
4124		RAMY	03	25	1255	N21	W48	03	21.9		B	CAO	20	2	5	3
4124	23598	MWIL	03	25	1530	N21	W52	03	21.7	3	(B)					
4124		HOLL	03	25	1605	N19	W50	03	21.9		B	CRO	20	4	4	3
4124		PALE	03	25	1849	N20	W54	03	21.7		B	CRO	40	10	7	4
4124		MANI	03	25	2305	N20	W56	03	21.7			CRO	60	9	7	3
4124		RAMY	03	26	1215	N22	W63	03	21.7		B	DAO	130	11	6	4
4124		HOLL	03	26	1448	N21	W66	03	21.6		B	DAO	100	5	7	2
4124	23598	MWIL	03	26	1600	N20	W65	03	21.7	3	(B)					
4124		PALE	03	26	1816	N21	W68	03	21.5		B	DAO	120	10	7	3
4124		MANI	03	26	2312	N21	W70	03	21.6			DAO	220	8	7	3
4124		LEAR	03	27	0228	N21	W70	03	21.7		B	DAI	160	9	7	2
4124		HOLL	03	27	1525	N20	W79	03	21.6		B	DAO	70	4	5	4
4124	23598	MWIL	03	27	1530	N20	W75	03	21.9	3	(B)					
4124		BOUL	03	27	1530	N21	W75	03	21.9		B	CRO	90	3	5	3
4124		PALE	03	27	1745	N21	W81	03	21.5		B	DAO	50	4	8	4
4124		MANI	03	27	2314	N21	W84	03	21.5			HRX	210	2	5	3
4121		PALE	03	19	2245	S14	E32	03	22.4		B	BXO	10	2	4	3
4121		MANI	03	20	0005	S14	E33	03	22.5			BXO	10	4	4	3
4121		LEAR	03	20	0008	S12	E31	03	22.3		B	CSO	30	3	3	3
4121		ATHN	03	20	0600	S15	E30	03	22.5			AXX	20	1	1	2
4121		RAMY	03	20	1200	S14	E24	03	22.3		B	CAO	20	7	4	3
4121		HOLL	03	20	1452	S14	E24	03	22.4		B	CRO	20	4	3	2
4121		PALE	03	20	1804	S13	E22	03	22.4		B	BXO	20	8	3	5
4121		MANI	03	20	2255	S13	E19	03	22.4			BXO	20	7	3	3
4121		LEAR	03	21	0018	S13	E18	03	22.4		B	CRO	20	7	4	3
4121		RAMY	03	21	1210	S13	E11	03	22.3		B	CRO	30	9	4	4
4121		HOLL	03	21	1540	S12	E08	03	22.3		B	CSO	40	13	5	4
4121		BOUL	03	21	1610	S13	E10	03	22.4		B	BXI	20	18	5	3
4121		PALE	03	21	1820	S13	E08	03	22.4		B	BXO	30	12	5	3
4121		LEAR	03	22	0016	S12	E03	03	22.2		B	BXO	20	8	4	3
4121		MANI	03	22	0120	S13	E04	03	22.4			BXO	20	7	6	3
4121		RAMY	03	22	1210	S12	W05	03	22.1		B	DAO	40	4	3	3
4121		PALE	03	22	1855	S12	W08	03	22.2		B	CRO	40	8	5	3
4121		MANI	03	23	0025	S13	W10	03	22.3			CRO	50	13	6	3
4121		LEAR	03	23	0043	S11	W11	03	22.2		B	BXO	50	12	6	3
4121		ATHN	03	23	0700	S12	W17	03	22.0			CRO	40	4	8	3
4121		RAMY	03	23	1235	S12	W17	03	22.2		B	DAO	60	26	9	3
4121	23596B	MWIL	03	23	1500	S12	W22	03	22.0	4	(B)					
4121		PALE	03	23	1810	S12	W21	03	22.2		B	DRO	50	17	8	3
4121		HOLL	03	23	2110	S12	W23	03	22.1		B	BXO	50	11	7	2
4121		MANI	03	24	0010	S12	W26	03	22.0			BXO	50	16	8	3
4121		LEAR	03	24	0042	S12	W25	03	22.1		B	BXO	60	14	8	3
4121		ATHN	03	24	0600	S12	W29	03	22.1			CRO	50	6	7	3
4121		RAMY	03	24	1200	S12	W34	03	21.9		B	DAO	50	11	9	3
4121		HOLL	03	24	1447	S12	W34	03	22.1		B	CRO	70	14	6	4
4121	23596B	MWIL	03	24	1500	S12	W34	03	22.1	3	(BP)					
4121		PALE	03	24	1810	S12	W36	03	22.0		B	DRO	70	14	7	4
4121		MANI	03	24	2336	S12	W39	03	22.0			DRO	60	15	7	3
4121		ATHN	03	25	0900	S13	W42	03	22.2			CHO	170	7	8	2
4121		LEAR	03	25	0905	S12	W44	03	22.1		B	BXO	30	11	7	3
4121		RAMY	03	25	1255	S12	W46	03	22.1		B	DRO	70	13	8	3
4121	23596B	MWIL	03	25	1530	S12	W49	03	22.0	4	(BP)					
4121		HOLL	03	25	1605	S12	W47	03	22.1		B	CAO	80	12	7	3
4121		PALE	03	25	1849	S12	W50	03	22.0		B	CSO	60	14	7	4
4121		MANI	03	25	2305	S12	W52	03	22.0			CSO	90	11	7	3
4121		RAMY	03	26	1215	S11	W58	03	22.1		B	CAO	40	6	6	4
4121		HOLL	03	26	1448	S12	W61	03	22.0		B	CRO	20	2	5	2

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4121	23596B	MWIL	03	26	1600	S12 W61	03	22.1	3	(B)					
4121		PALE	03	26	1816	S12 W63	03	22.0		B	CRO	20	3	7	3
4121		MANI	03	26	2312	S12 W66	03	22.0			BXO	20	3	6	3
4121		LEAR	03	27	0228	S12 W68	03	22.0		B	CRO	30	6	6	2
4121		HOLL	03	27	1525	S12 W75	03	22.0		A	HAX	30	1	1	4
4121		BOUL	03	27	1530	S11 W71	03	22.3		A	AXX	30	1	1	3
4121	23596B	MWIL	03	27	1530	S12 W72	03	22.2	3	(AP)					
4121		PALE	03	27	1745	S12 W76	03	22.0		B	BXO	10	2	3	4
4121		MANI	03	27	2314	S12 W79	03	22.0			BXO	40	3	3	3
4120		RAMY	03	18	1355	S13 E79	03	24.5		A	HAX	60	1	2	3
4120		HOLL	03	18	1540	S13 E79	03	24.6		B	CSO	30	3	8	2
4120		PALE	03	18	1930	S14 E78	03	24.7		B	DSO	30	1	8	4
4120		LEAR	03	19	0016	S13 E74	03	24.6		B	DSO	90	2	7	3
4120		ATHN	03	19	1016	S14 E74	03	25.0		B	CSO	60	4	8	2
4120	23597	MWIL	03	19	1745	S13 E65	03	24.6	3	(B)					
4120		PALE	03	19	2245	S14 E63	03	24.7		B	DSO	50	6	6	3
4120		MANI	03	20	0005	S13 E63	03	24.8			DAO	110	9	6	3
4120		LEAR	03	20	0008	S13 E62	03	24.7		B	DSO	50	8	8	3
4120		ATHN	03	20	0600	S13 E58	03	24.6			CHO	80	1	5	2
4120		RAMY	03	20	1200	S14 E55	03	24.7		B	DAO	50	6	7	3
4120		HOLL	03	20	1452	S13 E54	03	24.7		B	CRO	40	5	7	2
4120		PALE	03	20	1804	S13 E54	03	24.8		B	CRO	40	9	6	5
4120		MANI	03	20	2255	S12 E50	03	24.7			CRO	60	7	6	3
4120		LEAR	03	21	0018	S13 E49	03	24.7		B	CRO	30	5	6	3
4120		ATHN	03	21	0645	S15 E44	03	24.6			CRO	50	2	5	3
4120		RAMY	03	21	1210	S13 E40	03	24.5		A	HRX	30	3	1	4
4120		HOLL	03	21	1540	S12 E40	03	24.7		B	CAO	30	5	6	4
4120		BOUL	03	21	1610	S13 E39	03	24.6		B	CRO	30	3	6	3
4120		PALE	03	21	1820	S13 E37	03	24.6		A	HAX	30	3	1	3
4120		LEAR	03	22	0016	S12 E33	03	24.5		A	HRX	30	4	1	3
4120		MANI	03	22	0120	S13 E33	03	24.5			HRX	30	3	1	3
4120		ATHN	03	22	0700	S13 E32	03	24.7			AXX	10	1	1	3
4120		RAMY	03	22	1210	S13 E27	03	24.5		A	HAX	40	4	1	3
4120		BOUL	03	22	1625	S11 E24	03	24.5		B	CRO	30	6	4	2
4120		PALE	03	22	1855	S12 E23	03	24.5		A	HSX	20	2	1	3
4120		MANI	03	23	0025	S13 E20	03	24.5			HRX	30	2	1	3
4120		LEAR	03	23	0043	S12 E21	03	24.6		A	AXX	10	2	1	3
4120		ATHN	03	23	0700	S12 E14	03	24.3			ARX	10	1	1	3
4120		RAMY	03	23	1235	S13 E14	03	24.6		B	CRO	30	9	4	3
4120	23597	MWIL	03	23	1500	S13 E13	03	24.6	4	(B)					
4120		PALE	03	23	1810	S12 E11	03	24.6		B	BXO	20	2	3	3
4120		HOLL	03	23	2110	S13 E09	03	24.6		B	BXO	10	2	4	2
4120		MANI	03	24	0010	S12 E06	03	24.5			BXO	20	6	5	3
4120		LEAR	03	24	0042	S13 E08	03	24.6		B	BXO	20	4	4	3
4120		RAMY	03	24	1200	S14 E01	03	24.6		B	BXO	10	6	3	3
4120		HOLL	03	24	1447	S12 E01	03	24.7		B	BXO	10	2	2	4
4120	23597	MWIL	03	24	1500	S13 E01	03	24.7	2	(B)					
4120		PALE	03	24	1810	S12 W01	03	24.7		B	BXO	20	4	3	4
4120		MANI	03	24	2336	S12 W04	03	24.7			BXO	10	5	4	3
4120		LEAR	03	25	0905	S12 W09	03	24.7		B	BXO	10	6	3	3
4120		RAMY	03	25	1255	S13 W13	03	24.6		B	BXO	20	7	5	3
4120		HOLL	03	25	1605	S12 W13	03	24.7		B	BXO	10	2	3	3
4120		PALE	03	25	1849	S12 W15	03	24.7		B	BXO	10	3	3	4
4126	23599	MWIL	03	25	1530	S25 E13	03	26.7	3	(AP)					
4126		HOLL	03	25	1605	S24 E12	03	26.6		A	AXX		1		3
4126		PALE	03	25	1849	S25 E11	03	26.6		A	AXX	10	1	1	4
4126		MANI	03	25	2305	S25 E08	03	26.6			AXX	10	1	1	3
4126		RAMY	03	26	1215	S25 E00	03	26.5		A	AXX	10	1	1	4
4126		HOLL	03	26	1448	S24 W02	03	26.5		A	AXX	10	1		2
4126	23599	MWIL	03	26	1600	S25 W02	03	26.5	2	(AP)					
4126		PALE	03	26	1816	S25 W03	03	26.5		A	AXX	10	1	1	3
4126		MANI	03	26	2312	S25 W06	03	26.5			AXX	10	1	1	3
4126		LEAR	03	27	0228	S25 W08	03	26.5		A	AXX		1		2
4126		HOLL	03	27	1525	S25 W16	03	26.4		A	AXX	10	1		4
	23606	MWIL	03	27	1530	S22 W10	03	26.9	2	(AP)					
4123		BOUL	03	21	1610	S11 E78	03	27.5		A	AXX	10	1	1	3
4123		RAMY	03	25	1255	S15 E29	03	27.7		B	BXO	10	2	3	3

REGIONS OF SUNSPOT ACTIVITY
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

MARCH 1983

NOAA/ USAF Region	Mt Wilson Region	Sta	Observation Time Mo	Day	(UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
4123	23601	MWIL	03	26	1600	S12	E12	03	27.6	3	(AP)					
4123		LEAR	03	27	0228	S09	E08	03	27.7		A	AXX		1		2
4123		HOLL	03	27	1525	S11	W00	03	27.6		A	AXX		1		4
4123		BOUL	03	27	1530	S12	E01	03	27.7		A	AXX		1		3
4123	23601	MWIL	03	27	1530	S13	W01	03	27.6	2	(AP)					
		RAMY	03	22	1210	S18	E68	03	27.7		A	AXX	30	1		3
		RAMY	03	31	1316	S02	W43	03	28.3		A	AXX	10	2	1	2
0003		HOLL	03	29	1456	S14	W17	03	28.3		A	AXX		1		4
0003	23607	MWIL	03	29	1530	S14	W17	03	28.4	2	(AF)					
0003		PALE	03	29	1805	S13	W19	03	28.3		A	AXX		1		4
	23602	MWIL	03	26	1600	N27	E33	03	29.2	2	(AF)					
4134		RAMY	04	01	1210	S16	W45	03	29.1		B	BXO	10	4	3	4
4134		HOLL	04	01	1528	S15	W47	03	29.1		B	BXO	10	3	3	3
4134		BOUL	04	01	1537	S13	W44	03	29.3		B	BXO	10	3	3	2
4134	23614	MWIL	04	01	1600	S15	W46	03	29.2	3	(B)					
4134		PALE	04	01	1815	S14	W47	03	29.2		B	BXO	10	2	3	4
4134		MANI	04	02	0049	S14	W50	03	29.3			BXO	20	3	3	3
4134		LEAR	04	02	0058	S15	W51	03	29.2		B	BXO	10	2	3	3
4134		RAMY	04	02	1330	S15	W60	03	29.0		B	BXO	20	2	3	2
4134		HOLL	04	02	1605	S13	W62	03	29.0		A	AXX	10	2	1	3
4134		LEAR	04	03	0110	S14	W66	03	29.1		A	AXX		1	1	3
		BOUL	03	30	1635	S04	W12	03	29.8		A	AXX	10	1	1	2
		RAMY	03	31	1316	S20	W23	03	29.8		B	BXO	20	1	2	2
4128		RAMY	03	26	1215	S15	E50	03	30.3		B	DAO	80	9	3	4
4128	23603	MWIL	03	26	1600	S15	E47	03	30.2	4	(D)					
4128		PALE	03	26	1816	S14	E46	03	30.2		B	DAO	50	8	4	3
4128		MANI	03	26	2312	S14	E44	03	30.3			DSO	70	7	4	3
4128		LEAR	03	27	0228	S14	E42	03	30.3		B	DRO	30	6	4	2
4128		HOLL	03	27	1525	S14	E35	03	30.3		BG	DAI	80	12	6	4
4128		BOUL	03	27	1530	S14	E33	03	30.1		BG	BXO	40	8	5	3
4128	23603	MWIL	03	27	1530	S15	E34	03	30.2	3	(BY)					
4128		PALE	03	27	1745	S14	E34	03	30.3		B	CRO	40	9	6	4
4128		MANI	03	27	2314	S14	E31	03	30.3			CRO	40	2	5	3
4128		MANI	03	29	0001	S14	E17	03	30.3			CRO	30	6	6	3
4128		HOLL	03	29	1456	S13	E07	03	30.2		B	BXO	10	2	5	4
4128	23603	MWIL	03	29	1530	S15	E05	03	30.0	3	(AP)					
4128		BOUL	03	29	1620	S12	E07	03	30.2		B	BXO	10	6	6	3
4128		PALE	03	29	1805	S13	E06	03	30.2		B	BXO	10	3	7	4
4128		MANI	03	30	0020	S14	E04	03	30.3			BXO	10	1	7	3
4128		LEAR	03	30	0705	S13	W01	03	30.2		B	BXO	20	4	2	3
4128		RAMY	03	31	1316	S15	W09	03	30.9		A	AXX	10	1	1	2
	23608	MWIL	03	29	1530	S13	E10	03	30.4	2	(AF)					
	23612	MWIL	03	31	1545	S16	W15	03	30.5	2	(AF)					
4132		MANI	03	29	0001	S23	E20	03	30.5			BXO	10	3	3	3
4132		HOLL	03	30	1444	S22	W01	03	30.5		A	AXX	10	3	2	3
4132	23610	MWIL	03	30	1530	S22	W01	03	30.6	3	(AF)					
4132		PALE	03	30	1820	S22	W02	03	30.6		A	AXX	10	3	2	4
4132		LEAR	04	02	0058	S21	W29	03	30.8		A	AXX		1	1	3
4125		HOLL	03	24	1447	S10	E82	03	30.8		A	HSX	70	1	2	4
4125		PALE	03	24	1810	S10	E83	03	31.0		A	HSX	90	1	2	4
4125		MANI	03	24	2336	S09	E81	03	31.1			HSX	170	1	2	3
4125		ATHN	03	25	0900	S10	E80	03	31.4			HKX	150	1	3	2
4125		LEAR	03	25	0905	S09	E74	03	30.9		A	HSX	60	1	2	3
4125		RAMY	03	25	1255	S10	E72	03	31.0		A	HAX	50	1	1	3
4125	23600	MWIL	03	25	1530	S10	E70	03	30.9	3	(AP)					
4125		HOLL	03	25	1605	S09	E72	03	31.1		A	HSX	80	1	2	3
4125		PALE	03	25	1849	S09	E69	03	31.0		A	HSX	40	1	1	4
4125		MANI	03	25	2305	S09	E68	03	31.1			HSX	70	1	2	3
4125		RAMY	03	26	1215	S11	E60	03	31.0		A	HAX	60	1	1	4

REGIONS OF SUNSPOT ACTIVITY
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MARCH 1983

NOAA/ USAF Region	Mt Wilson Region	Sta	Observation Time Mo	Day	(UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
4125		HOLL	03	26	1448	S09	E58	03	31.0		A	HSX	50	1	2	2
4125	23600	MWIL	03	26	1600	S10	E58	03	31.0	4	(AP)					
4125		PALE	03	26	1816	S10	E57	03	31.0		A	HSX	40	1	1	3
4125		MANI	03	26	2312	S10	E55	03	31.1			HSX	60	1	2	3
4125		LEAR	03	27	0228	S09	E53	03	31.1		A	HSX	70	1	1	2
4125		HOLL	03	27	1525	S10	E45	03	31.0		A	HAX	40	1	1	4
4125		BOUL	03	27	1530	S10	E44	03	31.0		A	HSX	30	1	2	3
4125	23600	MWIL	03	27	1530	S10	E46	03	31.1	4	(AP)					
4125		PALE	03	27	1745	S09	E44	03	31.0		A	HRX	30	1	1	4
4125		MANI	03	27	2314	S10	E42	03	31.1			HSX	40	1	2	3
4125		MANI	03	29	0001	S10	E28	03	31.1			HRX	30	1	1	3
4125		HOLL	03	29	1456	S10	E18	03	31.0		A	HSX	20	1	2	4
4125	23600	MWIL	03	29	1530	S10	E18	03	31.0	4	(AP)					
4125		BOUL	03	29	1620	S09	E17	03	31.0		A	HRX	20	1	1	3
4125		PALE	03	29	1805	S10	E18	03	31.1		A	HSX	20	3	1	4
4125		MANI	03	30	0020	S10	E15	03	31.1			AXX	10	2	1	3
4125		LEAR	03	30	0705	S12	E12	03	31.2		A	AXX	10	1		3
4125		HOLL	03	30	1444	S08	E02	03	30.8		A	AXX		1		3
4125		HOLL	03	30	1444	S13	E07	03	31.1		B	BXO	10	2	4	3
4125	23611	MWIL	03	30	1530	S14	E06	03	31.1	2	(AP)					
4125		PALE	03	30	1820	S09	E06	03	31.2		A	AXX		1		4
4125		LEAR	03	31	0009	S12	E03	03	31.2		A	AXX	10	2	1	3
4125		RAMY	03	31	1316	S15	W09	03	30.9		A	AXX	10	1	1	2
4125		HOLL	03	31	1513	S12	W07	03	31.1		A	AXX	10	3	2	3
4125	23611	MWIL	03	31	1545	S12	W07	03	31.1	3	(AP)					
4125		PALE	03	31	1743	S11	W09	03	31.1		A	AXX	10	1	1	4
4125		LEAR	04	01	0010	S12	W12	03	31.1		B	BXO	20	4	3	3
4125		MANI	04	01	0134	S12	W11	03	31.2			AXX		1		2
4125		RAMY	04	01	1210	S14	W19	03	31.1		A	HAX	20	1	1	4
4125		HOLL	04	01	1528	S13	W20	03	31.1		B	BXO	10	4	4	3
4125		BOUL	04	01	1537	S12	W18	03	31.3		B	BXO	20	2	3	2
4125	23611	MWIL	04	01	1600	S14	W20	03	31.2	3	(BP)					
4125		PALE	04	01	1815	S13	W21	03	31.2		B	BXO	20	6	3	4
4125		MANI	04	02	0049	S13	W25	03	31.1			CRO	50	6	4	3
4125		LEAR	04	02	0058	S13	W24	03	31.2		B	BXO	20	7	3	3
4125		ATHN	04	02	0715	S13	W26	03	31.3			BXO	20	2	3	2
4125		RAMY	04	02	1330	S13	W33	03	31.1		B	DAO	50	2	4	2
4125		HOLL	04	02	1605	S13	W33	03	31.2		B	DAO	40	5	5	3
4125		PALE	04	02	1753	S13	W35	03	31.1		B	CRO	30	4	5	3
4125	23611	MWIL	04	02	1815	S14	W35	03	31.1	4	(B)					
4125		LEAR	04	03	0110	S13	W38	03	31.2		B	CRO	10	3	4	3
4125		ATHN	04	03	0850	S14	W43	03	31.1		B	CSO	10	4	4	3
4125		RAMY	04	03	1150	S13	W45	03	31.1		B	CAO	30	2	5	3
4125		HOLL	04	03	1520	S12	W46	03	31.2		B	CRO	30	3	6	3
4125	23611	MWIL	04	03	1530	S12	W49	03	31.0	4	(AP)					
4125		PALE	04	03	1805	S13	W48	03	31.1		B	CRO	30	4	5	4
4125		MANI	04	03	2357	S13	W50	03	31.2			CRO	60	4	5	3
4125		LEAR	04	04	0100	S12	W55	03	30.9		A	AXX	10	1		3
4125		RAMY	04	04	1130	S12	W60	03	31.0		A	HAX	40	1	1	3
4125	23611	MWIL	04	04	1600	S12	W62	03	31.0	3	(AP)					
4125		PALE	04	04	1810	S12	W64	03	30.9		A	AXX	10	2	1	3
4125		MANI	04	05	0003	S12	W67	03	31.0			AXX	30	2	1	3
4131		MANI	03	29	0001	S05	E28	03	31.1			CRO	10	4	3	3
4131		HOLL	03	29	1456	S06	E19	03	31.0		B	BXO	20	5	3	4
4131	23609	MWIL	03	29	1530	S06	E18	03	31.0	3	(B)					
4131		BOUL	03	29	1620	S06	E18	03	31.0		B	CRO	20	5	4	3
4131		PALE	03	29	1805	S06	E17	03	31.0		B	CRO	20	5	3	4
4131		MANI	03	30	0020	S07	E14	03	31.1			CRO	40	11	5	3
4131		LEAR	03	30	0705	S07	E11	03	31.1		B	CAO	50	10	3	3
4131		HOLL	03	30	1444	S06	E06	03	31.1		B	BXO	20	4	4	3
4131	23609	MWIL	03	30	1530	S06	E06	03	31.1	3	(B)					
4131		PALE	03	30	1820	S06	E04	03	31.1		B	BXO	10	4	3	4
4131		LEAR	03	31	0009	S07	E02	03	31.2		B	BXO	10	3	3	3
4131		RAMY	03	31	1316	S12	W05	03	31.2		B	BXO	20	2	2	2
4131		MANI	04	01	0134	S07	W13	03	31.1			BXO	10	5	4	2
4131		HOLL	04	01	1528	S07	W19	03	31.2		B	BXO	10	4	3	3
4131		BOUL	04	01	1537	S07	W18	03	31.3		B	BXO	10	2	3	2
4131	23615	MWIL	04	01	1600	S07	W19	03	31.2	3	(B)					
4131		PALE	04	01	1815	S07	W21	03	31.2		B	BXO	20	6	3	4
4131		MANI	04	02	0049	S07	W24	03	31.2			DRO	70	7	4	3

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NOAA/ USAF Region	Mt Wilson Region	Sta	Observation Time Mo	Day	(UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
4131		LEAR	04	02	0058	S07	W24	03	31.2		B	BXO	20	8	3	3
4131		ATHN	04	02	0715	S06	W26	03	31.4			DSO	50	2	3	2
4131		RAMY	04	02	1330	S07	W34	03	31.0		B	CAO	50	4	3	2
4131		HOLL	04	02	1605	S06	W34	03	31.1		B	CAO	30	4	3	3
4131		PALE	04	02	1753	S05	W35	03	31.1		B	BXO	30	8	4	3
4131	23615	MWIL	04	02	1815	S07	W35	03	31.1	4	(BP)					
4131		LEAR	04	03	0110	S06	W38	03	31.2		B	BXO	10	5	3	3
4131		ATHN	04	03	0850	S07	W42	03	31.2		B	CRO	10	3	2	3
4131		RAMY	04	03	1150	S06	W46	03	31.0		B	DAO	60	6	3	3
4131		HOLL	04	03	1520	S06	W45	03	31.3		B	BXO	30	5	4	3
4131	23615	MWIL	04	03	1530	S07	W47	03	31.1	3	(B)					
4131		PALE	04	03	1805	S06	W48	03	31.2		B	BXO	20	5	3	4
4131		MANI	04	03	2357	S06	W51	03	31.2			BXO	30	5	4	3
4131		LEAR	04	04	0100	S06	W52	03	31.1		A	AXX		1		3
	23616	MWIL	04	01	1600	S02	W16	03	31.5	2	(AP)					

SUDDEN IONOSPHERIC DISTURBANCES

March 1983

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide-spread Index	Number of Station Reports by Type SWF	SEA	SPA	LF-SPA	SES	Known Flare	NOAA/SESC Region
01	0025	0028	0046	1-	3			1		1	0021	4102
01	0135	0145	0215	1-	1					1	NF	
01	0211	0220	0256	1-	3			1	1	1	0211	4104
01	0714	0719	0740	1-	3		1	1	1	2	0715	No data
01	1046	1052	1125	1+	5		4		1	5	*	
01	2054	2100	2110	1	3					7	2058	4104
01	2112	2120	2200	1	3	1				1	2103	4098
01	2206	2214	2245	1-	3			1		5	2206	4104
01	2315	2322	2347	1-	3			1		3	2313	4104
02	0140	0144	0155D	1-	3			1	1	1	0138	4104
02	0348	0354	0414	1-	3			1	1		0355	4104
02	0420	0427	0500	1-	3			2	1	1	0420	No data
02	0713	0717	0749	1-	3		2	1		1	0713	No data
02	0931	0938	1000	1+	3		1	1	1		0932	No data
02	1134	1137	1145	1-	3		1		1		1125	No data
03	1035	1040	1050	1-	1				1		1034	No data
04	0700	0718	0830	1-	3		1	1	1	1	0706E	No data
04	1336	1338	1355	1-	3	1			1		1331	No data
04	1956	2001	2030	1	3					2	*	
04	2027	2045	2115	1	3					2	*	
04	2119	2127	2200	1	1					1	*	
05	0645	0658	0712	2	1		1				NF	
05	0922	0927	0947	1-	1			1			NF	
05	2315	2321	0000	1-	1					1	*	
06	0721	0732	0821D	1	5		1	1	2	2	0720	No data
06	1512	1530	1615	1	3					3	*	
06	2134	2140	2209	1-	1			1			*	
07	0344	0350	0359U	1-	3			1	1		NF	
08	0455	0458	0518	1-	1			1			0454	4104
08	0550	0555	0626	1-	1			1			0551	4104
08	0847	0852	0900	1-	3	1		1	1		0847	4104
08	1113	1119	1130	1-	3	1			1		1112	No data
09	0010	0020	0050D	1-	3			1	1		0011E	4104
09	0050E	0058	0119	1-	3			1	1		NF	
09	0455	0500	0520	1-	1				1		NF	
09	1340	1405	1430	1	1		1				1340	4110
09	1852	1900	1920	1-	1					1	NF	
09	2234	2235	2250	1-	1		1				NF	
10	0008	0044	0226	2+	3			1		1	0007	4105
10	0105	0112	0125U	1	1				1		0102	4110
10	0838	0940	1050	2	3	1	1	1	1		0835	No data
10	0900	0925	1020	1	3		2				0850	No data
11	1848	1911	1925	1+	3					2	NF	
12	1420	1429	1520	2	5	3	4		1	18	NF	
12	1553	1628	1800	3	3					2	NF	
12	1615	1637	1800	2	1					1	NF	
12	2304	2331	0122	1+	5			1		6	NF	
13	0538	0557	0707	1-	3			1	1		NF	
13	2201	2207	2242	1-	3			1		5	NF	
13	2247	2253	2320	1-	1			1			NF	
13	2320	2336	0014	1-	1			1			NF	
14	0748	0756	0836	1-	3		1	1	2		NF	
14	1141	1159	1230	1	5		3	1	1	2	1150	No data

SUDDEN IONOSPHERIC DISTURBANCES

March 1983

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide-spread Index	Number of Station Reports by Type SWF	SEA	SPA	LF-SPA	SES	Known Flare	NOAA/SESC Region
14	1537	1552	1630	1	3					2	NF	
14	1803	1809	1845	1-	3					12	NF	
14	2008	2030	2100	1	3					2	NF	
15	1445	1500	1530	1	1					1	NF	
15	1900	1902	1915	1-	3					2	1854	4116
16	0104	0116	0132	1-	3			1	1		0110	4116
16	0313	0326	0339D	1-	3			1	1		0315	4115
16	0338E	0351	0430D	1-	3	1		1	1		0338	4115
16	0430	0434	0450	1-	3			1	1		0435E	No data
16	2158	2207	2322	1	5			1		12	*	
17	0036	0052	0139	1-	3			1	1	3	0031	No data
17	0222	0237	0407	2+	5	1		2	2	6	0224	4116
17	0440E	0447	0526	1	3			2	1	2	0441	4116
17	0723	0729	0810	1-	5	1	1	1	2	2	0724E	No data
17	0900	0910	1100	3	5	4	3	1	2	5	0900	4116
17	1100	1109	1145	1+	5	4	2	1	1	2	1100	No data
17	1227	1238	1300	1-	1		1		1		1223	No data
17	1334	1343	1450	2+	5	4	3		1	12	1334	No data
17	1457	1502	1515	1-	3				1	1	1458	4116
17	2011	2020	2116	2+	5	1		1		13	2011	4116
17	2326	2334	0037	1	3			2		7	2330	4116
18	0050	0106	0140	1+	3			2	1	4	0053E	No data
18	0153	0205	0336	2	3	1		1	1	4	0154	4116
18	0438	0446	0628	2+	5	1	1	2	1	6	0441E	4116
18	0807	0817	0858	1-	5			1	2	3	0810E	No data
18	1049	1056	1120	1-	1		1		1		1047	No data
18	1417	1424	1450	1	3				1	5	1416	4116
18	1514	1522	1548	1	3		2				1507E	4116
18	1855	1858	2000	1	3					12	1851	4116
19	0307	0315	0341	1-	3			1	1		0308	4115
20	0040	0044	0102	1-	1			1			0046	4115
20	0253	0300	0330	1-	3			1	1	1	0254	4115
20	0336	0346	0417	1-	3			1	1		0348E	No data
20	0525	0535	0650	1-	3			2	1	2	0525	4115
20	1325	1349	1413	1	3		2				NF	
21	2015	2026	2040	1-	3					2	2014	4115
21	2123	2129	2156	1-	3			1		3	2123	4115
21	2142	2148	2215	1-	1					1	NF	
22	0155	0201	0223	1-	1			1			0157	4115
22	0245	0250	0306	1-	3			1	1		0246	4115
22	0344	0350	0414	1-	3			1	1		0345	4118
22	1218	1229	1253	1	1		1				NF	
23	0120	0136	0256	1	3			1	1	1	0124	4121
23	1853	1858	1930	1-	3					11	1853	4115
25	0030	0046	0130	1-	3	1		1	1	1	NF	
25	0241	0254	0420	1	3	1	1	2	1	1	0247E	No data
25	1125	1130	1143	1-	1					1	NF	
26	0228	0250	0320	1-	3			1	1		0230	4124
26	0603	0612	0650	1-	3			1	1	2	0559	No data
26	1422	1447	1452	1	1		1				NF	
27	1412	1447	1450	1	1		1				NF	
27	1551	1559	1621	1	1		1				NF	
28	0425	0434	0530	1-	3			1	1		NF	

SUDDEN IONOSPHERIC DISTURBANCES

March 1983

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide-spread Index	Number of Station Reports by Type SWF	SEA	SPA	LF-SPA	SES	Known Flare	NOAA/SESC Region
28	1010	1017	1049	1	1		1				NF	
29	0914	0925	0941	1	3			1	1		NF	
30	1226	1237	1302	1	1		1				NF	
31	0116	0122	0232	1-	1			1			NF	
31	0842	0901U	0920	1	1		1				NF	
31	0932	0934	1020	2	1				1		NF	

* = No Flare Patrol
NF= No Flare Reported
X-ray = Event observed only at X-ray wavelengths

OBSERVATORIES REPORTING FOR MARCH 1983*

Ayrshire, Scotland (AY)	SES	Lintong, China (LT)	SPA
Darmstadt, GFR (DA)	SWF	Louisville, Kentucky, USA (A26)	SES
Durham, North Carolina, USA (A54)	SES	Maui, Hawaii, USA (MI)	SWF
Edenvale, South Africa (A52)	SES	Missoula, Montana, USA (A31)	SES, SWF
Farsta, Sweden (FA)	SES	Panska Ves, Czechoslovakia (PU)	SEA, SWF
Frenchtown, Montana, USA (A56)	SES	Patterson, New Jersey, USA (A46)	SES
Glenorchy, Tasmania, Australia (GN)	SES	Portage, Michigan, USA (A51)	SES
Hiraiso, Japan (HI)	SWF	Roswell, New Mexico, USA (RW)	SES
Hobart, Tasmania, Australia (TA)	SEA	San Antonio, Texas, USA (SA)	SES
Houston, Texas, USA (A50)	SES	St. Cloud, Minnesota, USA (SC)	SES
Inubo, Japan (IN)	SPA	Travares, Florida, USA (A49)	SES
Juliusruh, GDR (JU)	SWF	Trenton, New Jersey, USA (NJ)	SES
Kuhlungsborn, GDR (KU)	SPA, SEA	Upice, Czechoslovakia (UI)	SEA
Lake Hiawatha, New Jersey, USA (A32)	SES	Valley Cottage, New York, USA (A01)	SES
Latrobe, Pennsylvania, USA (A19)	SES	Vsetin, Czechoslovakia (VS)	SEA
		Walla Walla, Washington, (USA) (A55)	SES

*Observations are not necessarily continuous for each reporting station.

SIDs by NOAA/SESC REGION

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Region Number																															
4098	1																														
4102	1																														
4104	4	2						3	1																						
4105										1																					
4110									1	1																					
4115																2			1	3	2	2	1								
4116															1	1	6	5													
4118																						1									
4121																							1								
4124																										1					
X-Ray																															
No Flare	1				2		1		4		1	4	4	4	1						1	1	1		2		2	2	1	1	3
No Flare Patrol	1			3	1	2										1															
No Data	1	4	1	2		1		1		2				1		1	5	3		1					1	1					
Event Totals	9	6	1	5	3	3	1	4	6	4	1	4	4	5	2	5	11	8	1	5	3	4	2		3	2	2	2	1	1	3

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

MARCH 1983

Day	Observation Start (UT)	Observation End (UT)	Sta	Decimetric Band Start (UT)	Decimetric Band End (UT)	Decimetric Band Int (1-3)	Metric Band Start (UT)	Metric Band End (UT)	Metric Band Int (1-3)	Dekametric Band Start (UT)	Dekametric Band End (UT)	Dekametric Band Int (1-3)	Spectral Type
01	0000	0744	CULG	0000.0	0146.0	1	0000.0	0159.0	1				IS,C,DC
			CULG	0139.0		1							DCIM
			CULG	0146.0	0743.5	1	0159.0	0643.0	1				IIIN
			CULG				0643.0	0744.5	1				IS
	0710	1607	BLEN	0914.5	0914.6	1							IIIG
	0640	1243	WEIS				1056.0	1315.0	1				IN
			BLEN	1314.4	1320.0	1							IIIG
	1251	1628	WEIS	1319.4	1319.8	1							DCIM
			BLEN	1448.2	1449.2	2	1448.2	1449.2	2				IIIG
			WEIS				1448.8	1449.1	1				DCIM
			BLEN				1503.9	1505.3	1				IIIG
			SGMR				1602.3	1602.5	1				III
			WEIS				1602.4	1602.7	3				IIIB
			SGMR				1942.8	1943.1	1				V
			PALE				2110.8	2112.0	2				V
			SGMR				2111.0	2112.0	1				V
			PALE				2112.0	2120.5	1				III
			LEAR				2253.0	0000.0	1				CONT
02	0300	0744	CULG				0303.0	0303.5	1				IIIG
			LEAR				0314.0	0349.0	1				CONT
			CULG				0316.5	0345.0	1				IS,DC
	0642	1630	WEIS				1035.0	1532.0	1				IN
	0708	1608	BLEN	1045.0	1608.0	1	1045.0	1608.0D	2				I,DC,N
	2045	2400	CULG										
03	0000	0743	CULG										
	0639	1310	WEIS										
	0706	1610	BLEN	1016.2	1018.0	2	1016.2	1018.0	3				IIIGG
			BLEN				1039.0	1118.0	2				I
	1326	1632	WEIS										
	2044	2400	CULG										
04	0000	0743	CULG										
	0704	1610	BLEN				0704.0E	0725.0	1				I
			CULG				0713.0	0725.5	3	II			H
	0635	1633	WEIS				0713.0	1629.0	1				IN
			WEIS				0713.3	0726.3	2	II			HARM
			CULG	0724.0	0743.5	1	0719.0	0743.5	1	IV			
			BLEN				1045.8	1046.3	2				IIIG
	2044	2400	CULG										
05	0000	0743	CULG										
	0702	1610	BLEN	1220.0	1610.0D		1010.0E	1610.0D	3				I
	0633	1456	WEIS				1221.0	1634.0	1				IN
			BLEN				1254.5	1257.9	3				IIIGG
			BLEN	1327.2	1327.4	2							IIIG
	1458	1634	WEIS				1509.7	1509.8	2				IIIB
			WEIS	1544.4	1544.5	2							DCIM
			WEIS				1554.3	1600.8	3				IIIGG/V
	2044	2400	CULG										
06	0000	0743	CULG				0041.0		1				IIIG,U
			CULG	0352.5	0353.0	1	0352.5	0355.0	1				IIIG
			CULG				0357.5		2				IIIB
			WEIS				0634.0	0702.0	1				I
	0700	1610	BLEN				0700.0E	1610.0D	3				I
	0531	0754	WEIS				0705.3	0705.4	1				U
			CULG				0705.5		1				IIIB,U
			BLEN	0720.3	0726.5	3	0720.7	0729.7	3	IV			
			WEIS				0720.6	0722.8	3				DCIM
			CULG	0721.0	0723.0	2	0722.0	0723.0	1				IIIGG,U,V
	2044	2400	CULG	2118.5	2400.0	1	2055.0	2400.0	1				IS
07			CULG	0000.0	0030.5	1							IN
	0000	0743	CULG				0000.0	0108.5	1				IS
			CULG				0420.0	0424.0	1				IS
			CULG	0518.0	0640.0	1							IN
	0621	1638	WEIS				0621.0	1637.0	2				IS
			CULG	0640.0	0743.0	1	0640.0	0743.0	1				IS
	0655	1615	BLEN				0700.0E	1615.0D	2				I

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

MARCH 1983

Day	Observation Start (UT)	Observation End (UT)	Sta	Decimetric Band Start (UT)	Decimetric Band End (UT)	Decimetric Band Int (1-3)	Metric Band Start (UT)	Metric Band End (UT)	Metric Band Int (1-3)	Dekametric Band Start (UT)	Dekametric Band End (UT)	Dekametric Band Int (1-3)	Spectral Type
07			WEIS				1103.2	1103.3	1				III G
			WEIS				1220.4	1226.8	1				III G
			WEIS				1239.3	1239.5	1				III B
	2043	2400	CULG	2136.0	2400.0	1							IS
08	0000	0743	CULG	0000.0	0050.0	1							IS
			CULG	0050.0	0147.0	1							IN
			CULG	0550.5	0552.0	1							DC IM
			CULG	0619.0	0635.0	1							IN
	1051	1615	BLEN				1051.0E	1615.0D					I,DC
	0627	1314	WEIS				1205.4	1207.3	2				III G
			BLEN	1349.3	1351.8	2							DC IM
			BLEN	1359.6	1359.8	2							DC IM
			SGMR				1502.3	1512.6	2				GG
	1318	1640	WEIS				1502.6	1508.8	2				III GG
			WEIS				1511.7	1513.8	3				III G
			BLEN				1531.8	1532.5	2				III G
			BLEN	1542.7	1549.1	1							DC IM
	2043	2400	CULG	2049.0	2400.0	1	2043.0	2400.0	1				IS
			CULG				2115.5		2				III B
			CULG	2141.0	2141.5	2	2140.5	2141.5	3				III G,G,U
			CULG	2145.0	2145.5	1	2145.0	2145.5	2				III G
09			CULG	0000.0	0742.5	1							IS
	0000	0743	CULG				0000.0	0315.0	1				IN
			LEAR				0101.0	1029.0	1				CONT
			CULG				0308.0		1				III B
			CULG				0311.0	0743.0					III S,W
			CULG				0315.0		1				IS
			CULG				0319.5	0738.5	1				III N
			CULG				0604.5	0737.0	1				III G,N
			CULG				0622.5	0737.0	2				III N
			WEIS				0626.0	1640.0	3				III S
	0625	1641	WEIS				0631.0	1602.0	2				IS
	0650	1615	BLEN				0650.0E	1615.0D					I
			WEIS				0829.0	0957.0	2				CONT
			LEAR				0837.1	0841.3	3				III
			SGMR				1428.5	1541.0	1				CONT
			WEIS	1524.2	1528.8	3							DC IM
			CULG				2043.0	2349.0					III S,W
	2043	2400	CULG	2043.0	2235.0	1	2043.0	2400.0	1				IS,C
			CULG				2048.5	2348.5	1				III N
			CULG				2048.5	2359.0	1				RSDP,N
			CULG				2057.0	2349.0	2				III N
			CULG	2235.0	2400.0	1							IN
			LEAR				2302.0	0353.0	2				CONT
			CULG				2349.0	2400.0	2				III S
10			CULG				0000.0	0035.0	2				III S
			CULG	0000.0	0618.0	1							IN
	0000	0742	CULG				0000.0	0143.5	1				IS,C,DC
			PALE				0003.8	0018.6	2				G
			CULG				0004.0		3				III B
			CULG				0006.5	0011.5	3	0008.0	0012.0	2	III G,G,U
			CULG				0012.0	0012.5	3				III G
			CULG				0014.5	0736.5	1				RSDP,N
			CULG				0035.0	0135.5					III S,W
			CULG				0046.5	0131.0	1				III N
			CULG				0303.0	0459.0	1				IN
			CULG	0447.0	0535.0	2							
			LEAR				0447.0	0939.0	1				CONT
			CULG				0452.5	0720.5	2				III N
			CULG				0452.5	0737.5	1				III N
			CULG				0452.5	0742.0					III S,W
			CULG				0453.0	0453.5	1				III G
			CULG				0459.0	0741.5	1				IS,C,DC
	0622	1402	WEIS				0625.0	1431.0	1				IN
	1407	1643	WEIS				0641.4	0641.5	1				III B
	0648	1617	BLEN				0648.0E	1617.0D					I,DC
			WEIS				0648.8	0649.0	1				III B
			WEIS				0756.3	0756.9	1				III G

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

MARCH 1983

Day	Observation Start (UT)	Observation End (UT)	Sta	Decimetric Band Start (UT)	Decimetric Band End (UT)	Decimetric Band Int (1-3)	Metric Band Start (UT)	Metric Band End (UT)	Metric Band Int (1-3)	Dekametric Band Start (UT)	Dekametric Band End (UT)	Dekametric Band Int (1-3)	Spectral Type
10			WEIS				0839.0	0854.8	2				IIIGG
			WEIS				0850.4	0910.1	2				II
			LEAR				0851.8	0901.8	1				II
			WEIS				1106.2	1106.3	1				IIIB
			BLEN				1125.0	1132.3	2				III,G
			WEIS				1201.4	1201.5	1				IIIB
			BLEN				1204.6	1214.6	2				III,G
			WEIS				1204.7	1204.8	1				IIIB
			WEIS				1210.0	1212.3	3				IIIGG
			WEIS				1231.3	1231.4	1				IIIB
			WEIS				1234.1	1234.2	1				IIIB
			WEIS				1239.0	1239.3	1				IIIB
			BLEN	1353.3	1412.0	2							DCIM
			CULG				2042.5	2151.5	1				IIIN
	2042	2400	CULG				2042.5	2105.5					IIIS,W
			CULG				2153.0	2158.5	1				IS
11	0000	0742	CULG										
			CULG	0055.5	0056.0	1							I
			CULG				0111.0	0159.5					IIIS,W
			CULG				0111.0	0647.0	1				IN
			LEAR				0111.1	0120.8	1				III
			CULG				0111.5	0739.5	1				IIIN
			LEAR				0131.8	0206.0	1				CONT
			CULG				0132.5		2				IIIB
			CULG				0137.0		2				IIIB
			LEAR				0556.0	0609.5	1				G
			LEAR				0631.8	0717.6	1				CONT
			CULG				0632.0	0645.5	2				IIIN
	0621	1644	WEIS				0632.1	0634.4	2				IIIG
			WEIS				0640.5	0642.0	1				IIIG
			WEIS				0643.8	0645.4	1				IIIG
			WEIS				0649.2	0649.4	1				IIIG
			LEAR				0746.1	0746.8	1				III
	0645	1620	BLEN				1224.7	1227.9	3				III,GG
			BLEN				1404.0	1538.0					
	2042	2400	CULG	2254.5	2255.0	1							IIIG
12	0000	0612	CULG										
	0614	1255	WEIS										
	0645	1630	BLEN	1420.4	1420.8	3							DCIM
	1506	1646	WEIS										
	2042	2400	CULG										
13	0000	0741	CULG										
	0617	1647	WEIS										
	0645	1630	BLEN										
	2041	2400	CULG										
14			LEAR				0115.8	0117.0	1				III
	0000	0721	CULG				0116.0	0116.5	3				IIIG,U,V
			CULG				0505.0	0515.0	1				IIIS
			LEAR				0507.5	0514.0	1				III
			CULG	0510.0	0511.5	1							
	0645	1630	BLEN										
	0615	1358	WEIS				1151.4	1151.6	2				IIIG
	1435	1649	WEIS										
	2041	2400	CULG	2106.0	2106.5	1	2106.5		1				IIIG
15	0000	0741	CULG										
	0612	1651	WEIS										
	0645	1056	BLEN										
16	0021	0741	CULG										
	0610	1312	WEIS										
	1123	1630	BLEN										
	1321	1345	WEIS										
	2042	2400	CULG	2159.0		1							DCIM
			CULG				2224.5		2				IIIB
			CULG	2227.0	2227.5	2	2227.5	2228.0	2				IIIG
			CULG	2259.0		2	2259.0	2259.5	3				IIIG,U

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16			LEAR				2259.0	2259.6	1				III
			CULG	2322.0	2323.0	3	2322.0	2323.0	3				IIIG
17	0000	0740	CULG	0057.0	0057.5	1	0057.0	0057.5	1				IIIG
			LEAR				0057.1	0057.5	1				III
			CULG				0217.5		2				IIIB
			CULG	0304.0		1	0304.0	0304.5	3				IIIG,V
			CULG				0347.5		1				IIIG
	0635	1630	BLEN				0639.5	0639.7	3				IIIG
			BLEN	0654.4	0654.7	3	0654.4	0654.7	3				IIIG
			CULG	0654.5		1	0654.5		1				IIIG
			CULG	0727.5		1	0727.5	0728.0	1				IIIG
			BLEN	0727.6	0734.5	3	0727.6	0734.5	3				IIIGG,V
			CULG	0731.0	0732.0	2	0731.5	0732.0	3				IIIGG
			CULG	0734.0	0734.5	2	0734.0		2				IIIG
			BLEN				0811.5	0811.8	3				IIIG
			BLEN	0824.9	0825.5	2							DCIM
			BLEN	0900.5	0902.1	2							DCIM
			BLEN	1033.3	1033.6	3	1022.5	1033.6	3				IIIG
			BLEN	1059.6	1100.4	2	1056.6	1100.4	3				IIIG,DCIM
	1004	1653	WEIS				1133.4	1133.6	3				IIIG
			BLEN				1201.8	1202.6	2				IIIG
			BLEN	1222.2	1222.4	2							DCIM
			WEIS				1233.3	1235.0	3				DCIM
			BLEN	1234.3	1253.3	2	1233.4	1238.5	3				IIIGG,V,DCIM
			BLEN	1334.5	1337.0	3							DCIM
	2041	2400	CULG				2111.0	2137.0	1				IN
			CULG	2339.5	2400.0		2340.0	2400.0					IS,W
18	0000	0740	CULG				0000.0	0015.0					IS,W
			CULG				0015.0	0549.0	1				IN
			LEAR				0121.6	0211.5	1				CONT
			CULG				0127.0	0324.0	1				IIIN
			CULG				0150.5		2				IIIB
			LEAR				0229.8	0231.1	1				III
			CULG				0230.0	0231.0	3				IIIG
			CULG				0315.5		2				IIIG
			LEAR				0315.6	0316.0	1				III
			CULG	0338.0	0518.0	1							IN
			LEAR				0534.8	0556.6	1				G
			CULG				0536.5	0538.5	3				IIIG
			CULG				0715.0	0716.0	3				IIIGG
			LEAR				0715.1	0716.1	2				III
	0630	1630	BLEN				0715.3	0715.9	2				IIIGG
	0605	1202	WEIS				0715.3	0716.3	3				IIIGG
			LEAR				0802.0	0802.3	1				III
			LEAR				0831.6	0832.0	1				III
			WEIS				0831.7	0832.0	2				IIIG
			WEIS				0940.3	0941.3	2				IIIG
			WEIS				1025.0	1025.9	3				IIIG
			WEIS				1028.7	1029.2	3				IIIG
			WEIS				1136.5	1139.4	3				IIIGG
			WEIS				1154.2	1154.6	3				IIIG
	1210	1655	WEIS										
			PALE				1818.8	1820.8	2				V
	2040	2400	CULG										
19	0000	0740	CULG				0113.0	0117.0	1				IIIS
			LEAR				0113.0	0113.1	1				III
			CULG	0140.0	0140.5	1	0140.0	0140.5	2				IIIG
			LEAR				0140.1	0140.5	1				III
			PALE				0140.1	0140.5	1				III
			CULG				0209.0		1				IIIB
			PALE				0219.8	0220.5	2				III
			CULG				0220.0	0220.5	3	0220.0	0220.5	3	IIIG
			LEAR				0220.0	0220.6	2				III
			CULG				0247.5	0252.5	1				IIIS
			CULG				0300.5	0301.0	3	0301.0		2	IIIB
			LEAR				0300.6	0301.0	2				III
			CULG	0312.5	0612.5	1							IN
			CULG				0431.5	0438.5	3	0431.5	0436.5	2	IIIS

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19			LEAR				0431.6	0437.5	3				III
			CULG				0506.0	0637.0					IIIS,W
			CULG				0506.5	0721.5	1				IIIN
			LEAR				0506.5	0506.8	1				III
			LEAR				0509.5	0745.0	1				CONT
			CULG				0524.0	0712.5	1				IN
	0604	1655	WEIS				0612.0	1646.0	2				IIIN
			CULG				0616.0		2				IIIB
			WEIS				0641.9	0642.1	3				IIIG
			CULG				0704.5		3				IIIB
			WEIS				0704.7	0704.8	3				IIIB
			CULG				0721.5	0722.5	2				IIIG
	0630	1630	BLEN				1043.5	1630.0D					I,N
			BLEN	1420.3	1420.4	1							IIIG
			WEIS				1421.3	1422.8	2				IIIG
	2040	2400	CULG				2040.0	2145.0	1				IS
			CULG				2145.0	2335.0	1				IN
			CULG	2338.5	2347.0	1	2335.0	2400.0	1				IS
20	0000	0739	CULG				0000.0	0729.0					IS,DC
			LEAR				0207.1	0207.8	1				III
			LEAR				0347.0	0347.3	1				III
			CULG				0351.5	0352.5	3	0351.5	0352.0	3	IIIG
			LEAR				0351.6	0352.6	2				III
	0602	1021	WEIS				0628.0	1654.0	1				IN
			LEAR				0630.0	0650.0	1				CONT
			LEAR				0710.0	0812.0	1				CONT
	1045	1658	WEIS				0739.0	1236.0	1				IIIN
			LEAR				0924.8	0925.1	1				III
			WEIS				0924.8	0925.0	1				RS
	0630	1630	BLEN	1314.9	1324.0	1	0630.0E	1630.0D	2				I,N
	2040	2400	CULG	2040.0	2400.0	1	2040.0	2400.0	1				IS,C,DC
21	0000	0730	CULG	0000.0	0154.0	1	0000.0	0156.0	1				IS
			LEAR				0111.3	0111.5	1				III
			LEAR				0220.5	0220.6	1				III
			LEAR				0517.6	0517.8	1				III
	0630	1630	BLEN				0630.0E	1630.0D	2				I,N
			BLEN	0829.8	0830.2	3							DCIM
			WEIS				0851.8	0851.9	1				RS
	0600	1659	WEIS				0927.0	1654.0	1				IN
			WEIS				1328.7	1328.8	1				IIIB
			WEIS				1330.6	1330.7	1				IIIB
	2040	2400	CULG										
22	0000	0739	CULG	0106.0	0319.0	1							IN,DC
	0630	1630	BLEN				0630.0E	0715.0	1				I,N
	0552	0908	WEIS				0639.0	0715.0	1				I
			WEIS				1019.2	1019.3	1				IIIB
			WEIS				1131.0	1152.0	1				I
	0912	1700	WEIS				1426.5	1426.9	1				IIIG
			SGMR				1723.5	1724.0	1				V
			SGMR				1732.5	1740.0	1				V
			SGMR				1848.6	1849.6	1				V
			PALE				1850.3	1850.6	2				V
	2040	2400	CULG										
23	0630	0714	BLEN										
	0000	0738	CULG				0648.0		1				IIIB
			LEAR				0652.5	0652.6	1				III
			LEAR				0853.0	0853.3	1				III
	0556	1701	WEIS				0853.1	0853.4	3				IIIG
			WEIS				0928.2	0928.3	1				IIIG
			LEAR				0943.8	0944.1	1				III
			WEIS				0943.9	0944.6	3				IIIG
			WEIS				1026.7	1027.1	2				IIIG
			WEIS				1029.6	1029.7	1				IIIB
			WEIS				1203.2	1205.2	2				IIIG
			WEIS				1216.6	1216.8	1				IIIB
			WEIS				1232.7	1233.3	3				IIIG
			WEIS				1347.6	1349.7	3				IIIG/VU

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23			SGMR				1347.8	1349.1	3				V
			SGMR				1351.0	1353.1	2				V
			WEIS				1351.0	1354.3	3				IIIG
			SGMR				1454.1	1454.8	1				V
			WEIS				1454.2	1454.8	3				IIIG
	1531	1630	BLEN				1531.0E	1630.0D	2				I
			WEIS				1630.2	1630.3	2				IIIG
			WEIS				1654.8	1656.9	2				IIIG
			SGMR				1656.1	1656.6	1				V
			SGMR				1731.3	1731.5	1				III
			PALE				1813.8	1814.0	2				III
			SGMR				1813.8	1814.1	1				III
			SGMR				1847.0	1847.1	1				III
			PALE				1847.1	1847.3	1				III
			PALE				1852.3	1854.1	3				V
			SGMR				1852.5	1854.3	3				V
			PALE				1854.6	1854.8	1				V
			SGMR				1854.6	1854.8	1				III
			PALE				1906.3	1906.5	2				III
			SGMR				1906.3	1906.5	1				III
			SGMR				1934.1	1934.3	1				III
	2039	2400	CULG				2045.5	2051.5	3			II	N,U
			PALE				2045.5	2045.6	1				III
			SGMR				2045.6	2045.8	1				III
			CULG				2122.0	2209.0	2				IIIN
			CULG	2123.5	2338.0	1							IN
			CULG				2140.5	2339.5	1				IIIN
			CULG				2154.0	2156.5	3	2154.0	2155.5	3	IIIG,V
			SGMR				2154.0	2155.6	2				V
			PALE				2154.1	2155.8	3				V
			CULG				2235.0		3				IIIB,U
			LEAR				2300.3	2302.6	2				III
			CULG	2302.0		3	2300.5	2303.0	3				IIIGG,V
			PALE				2302.0	2302.8	3				V
			LEAR				2339.8	2340.5	2				III
			CULG				2340.0		3				IIIG
			PALE				2340.0	2340.5	2				III
24	0000	0738	CULG				0026.5	0027.5	3				IIIG,U
			LEAR				0026.5	0027.6	1				III
			CULG				0027.5	0424.0	1				IIIN
			CULG	0101.0	0533.0	1							IN
			CULG				0241.5	0342.5	2				IIIN
			LEAR				0241.6	0243.8	1				III
			PALE				0241.6	0242.0	2				III
			LEAR				0342.3	0342.6	1				III
			CULG				0359.5	0401.5	3				IIIG,V
			LEAR				0359.6	0401.6	2				III
	0551	0659	WEIS										
	0630	1630	BLEN				1235.0	1301.4	1				I
	0703	1704	WEIS				1454.8	1454.9	1				IIIB
			WEIS				1546.9	1547.3	1				IIIG
	2039	2400	CULG				2116.5		1				IIIB
			CULG				2124.5		1				IIIB
25			LEAR				0031.3	0033.8	2				III
	0000	0738	CULG				0031.5	0032.0	3	0031.5		1	IIIG
			CULG				0033.5	0034.0	1				IIIG
			LEAR				0207.0	0207.6	1				III
			LEAR				0247.3	0250.1	1				III
			CULG				0247.5	0249.0	1				IIIG
			CULG				0259.0	0314.0	3			II	
			LEAR				0259.3	0315.0	1			II	
			PALE				0302.1	0310.8	2			II	
			LEAR				0340.8	0341.1	1				III
			LEAR				0357.8	0358.3	1				III
			CULG				035R.0		2				IIIB
			CULG	0412.5	0548.5	1							IS
			CULG				0420.0		1				IIIB
			LEAR				0543.6	0544.3	1				III
			CULG				0544.0		1				IIIB

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25			LEAR				0608.3	0611.1	2				III
			CULG				0610.5		2				IIIB
	0549	1607	WEIS				0610.6	0611.0	3				IIIG
			LEAR				0629.6	0629.8	1				III
			WEIS				0629.6	0629.8	1				IIIG
			LEAR				0753.3	0754.1	1				III
			WEIS				0754.0	0754.3	1				IIIB
			LEAR				0822.8	0823.3	1				III
			WEIS				0822.9	0823.3	2				IIIB
			LEAR				0855.8	0856.1	1				III
			WEIS				0855.9	0856.2	2				IIIG
			WEIS				1431.0	1449.6	3				II
	0630	1630	BLEN	1435.4	1439.4	3	1434.0	1440.6	3				IV
			WEIS				1435.4	1440.4	2				CONTP
			WEIS				1553.1	1553.6	2				IIIG
			SGMR				1610.1	1610.8	1				V
			SGMR				1658.3	1659.1	1				V
	1619	1705	WEIS				1658.6	1659.3	2				IIIG
			PALE				1926.6	1927.1	2				III
			SGMR				1926.8	1951.6	1				GG
			PALE				1950.1	1951.8	2				III
	2038	2400	CULG	2043.0	2240.0	1							IS
			CULG				2109.5	2156.0	3	2121.5	2155.5	2	IIIN,U
			CULG				2109.5	2219.0	1				IIIN
			PALE				2150.6	2151.1	2				III
			SGMR				2150.8	2151.8	1				V
			PALE				2151.6	2152.8	3				V
			CULG				2152.0		3	2152.0		2	IIIG,V
			PALE				2155.0	2155.3	2				V
			CULG				2228.0	2228.5	2				IIIG
26	0000	0737	CULG	0111.0	0348.5	1							IN
			CULG				0214.0	0216.5	1				IIIG
			LEAR				0214.0	0216.6	1				III
			CULG				0237.0	0706.5	1				IIIN
			CULG				0338.5		2				IIIG
			LEAR				0359.1	0359.6	1				III
			LEAR				0447.0	0448.1	1				III
			LEAR				0507.8	0508.6	1				III
			LEAR				0532.8	0533.1	1				III
			LEAR				0557.6	0610.1	1				G
	0548	1707	WEIS				0609.7	0609.9	2				IIIG
			WEIS				0617.7	0619.4	2				IIIG
			CULG				0618.0	0713.5	2				IIIN
			LEAR				0618.1	0619.6	1				III
			LEAR				0634.8	0639.0	1				III
			WEIS				0634.9	0635.2	2				IIIB
			LEAR				0708.1	0708.6	1				III
			WEIS				0708.2	0708.6	2				IIIG
			WEIS				0741.4	0741.9	3				IIIG
			LEAR				0741.5	0744.1	1				III
			LEAR				0754.6	0755.3	1				III
			WEIS				0754.6	0755.2	2				IIIG
			WEIS				0830.4	0830.6	1				IIIB
			LEAR				0831.8	0832.6	2				III
			WEIS				0831.9	0832.4	2				IIIG
			WEIS				1243.1	1243.2	1				IIIB
			WEIS				1246.1	1249.8	3				IIIGG
	0630	1630	BLEN				1248.5	1249.4	2				IIIG
			SGMR				1248.6	1249.1	1				III
			WEIS				1317.1	1317.2	1				IIIB
			WEIS				1319.7	1319.8	1				IIIB
			WEIS				1324.7	1325.0	1				IIIG
	2039	2400	CULG										
27	0000	0737	CULG										
	0000	0737	CULG				0706.0		1				IIIB
	0630	1630	BLEN				0833.2	0843.6	3				IIIG
			LEAR				0833.3	0833.8	2				III
	0545	1549	WEIS				0833.3	0833.7	3				IIIG
			LEAR				0839.1	0839.3	1				III

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27			WEIS				0839.2	0839.3	1				IIIB
			LEAR				0843.0	0844.1	2				III
			WEIS				0843.1	0843.1	2				IIIG
			WEIS				0847.8	0847.9	1				IIIB
			LEAR				0849.3	0849.5	1				III
			WEIS				0849.3	0849.5	2				IIIG
			WEIS				0902.8	0903.6	2				IIIG
			LEAR				0903.3	0903.3	1				III
			BLEN				1048.1	1048.2	1				IIIB
			WEIS				1140.6	1140.9	1				IIIB
			WEIS				1211.6	1211.8	2				IIIB
			WEIS				1250.2	1250.3	2				IIIB
			WEIS				1312.9	1313.6	1				IIIG
			BLEN				1327.3	1327.6	2				IIIG
			WEIS				1548.1	1548.4	1				IIIG
	2038	2400	CULG										
	2158	2400	CULG										
28	0630	1630	BLEN										
	0543	1710	WEIS				0706.2	0706.3	1				IIIB
29	0000	0737	CULG										
	0630	1630	BLEN										
	0642	1118	WEIS										
	1220	1710	WEIS										
	2037	2400	CULG										
30	0000	0736	CULG										
			CULG	0128.5		1	0128.5		1				IIIB
			CULG				0208.5	0426.0	1				IIIN
	0541	1711	WEIS										
			CULG				0708.0	0711.5	1				IIIG
			PALE				2335.3	2336.1	2				III
	2037	2400	CULG				2335.5		2				IIIB,U
			LEAR				2335.5	2336.0	1				III
			CULG	2336.5	2338.5	1	2336.5	2339.0	1				IIIS
31	0000	0735	CULG										
	0540	0754	WEIS										
	0758	1713	WEIS										
	2043	2400	CULG										

The symbols used under the column heading SPECTRAL TYPE have the following definitions:

B = Single burst
G = Small group (< 10) of bursts
GG = Large group (> 10) of burst
C = Underlying continuum (particularly with Type I)
S = Storm in the sense of intermittent but apparently connected activity
N = Intermittent activity in this period
U = U-shaped burst of Type III

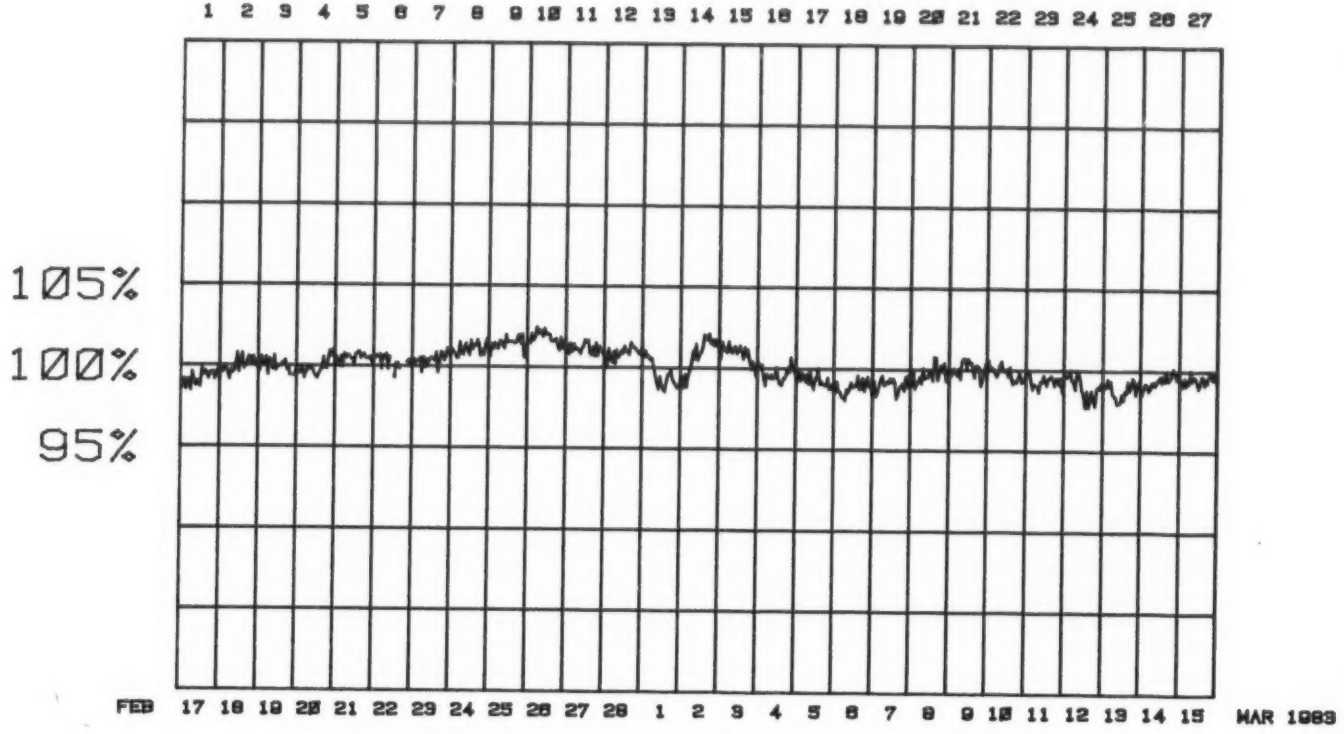
RS = Reverse slope burst
DP = Drifting pairs
DC = Drifting Chains
H = Herringbone
W = Weak
P = Pulsations
CONT = Continuum
UNCLF = Unclassified activity
DCIM = Fast drift

C O S M I C R A Y I N D I C E S
(Neutron Monitors)
March 1983

Mar 1983	THULE Average (cts/h)/100	KIEL Average (cts/h)/100	TOKYO Average (cts/h)/100
1	4050	5619.6	3542.4
2	4101	5692.4	3562.6
3	4104	5686.7	3562.9
4	4054	5635.4	3542.0
5	4038	5606.3	3544.9
6	4020	5617.4	3556.3
7	4030	5636.2	3562.9
8	4056	5671.8	3575.9
9	4070	5706.2	3574.8
10	4060	5675.0	3559.2
11	4041	5656.5	3549.0
12	4027	5659.1	3554.4
13	4020	5642.4	3547.0
14	4043	5654.2	3537.5
15	4047	5664.8	3535.8
16	4050	5663.9	3531.9
17	4059	5675.1	3546.0
18	4074	5696.1	3560.8
19	4089	5726.5	3566.0
20	4079	5731.0	3561.7
21	4086	5747.8	3557.7
22	4082	5769.0	3561.5
23	4110	5765.5	3550.7
24	4107	5753.0	3554.5
25	4102	5795.2	3580.0
26	4054	5713.7	3552.5
27	4082	5734.2	3547.7
28	4109	5789.9	3565.5
29	4150	5800.2	3586.4
30	4120	5781.1	3578.5
31	4114	5776.1	3578.5
MEAN	4072	5701.4	3557.7

For less than 24-hour coverage, parentheses enclose the number of hours for which data are available. For Climax and Huancayo, parentheses enclose the number of section hours whenever the sum of both sections falls below 40 hours.

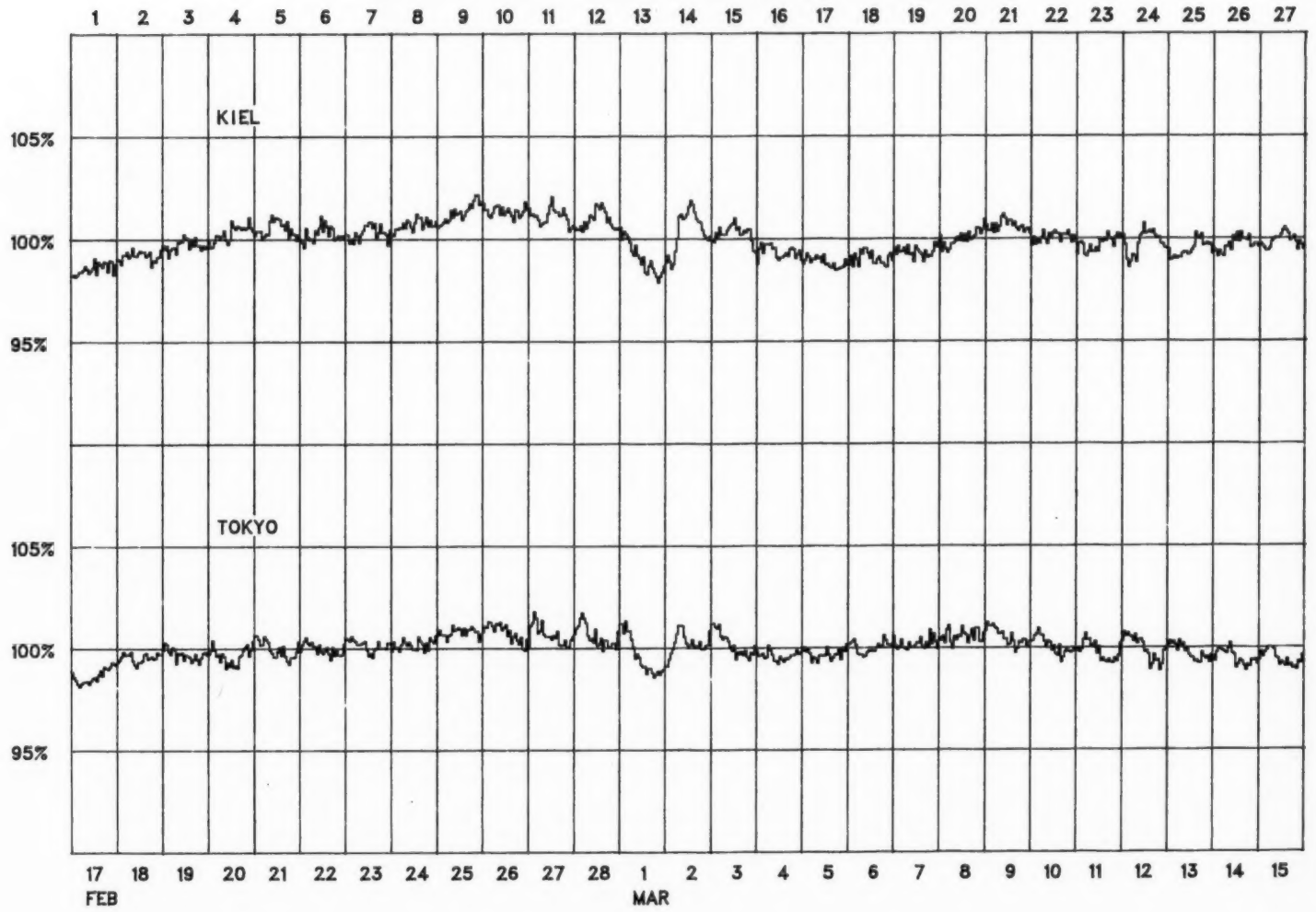
THULE NEUTRON MONITOR



BARTELS ROTATION 2044

COSMIC RAY INDICES
(Neutron Monitor)

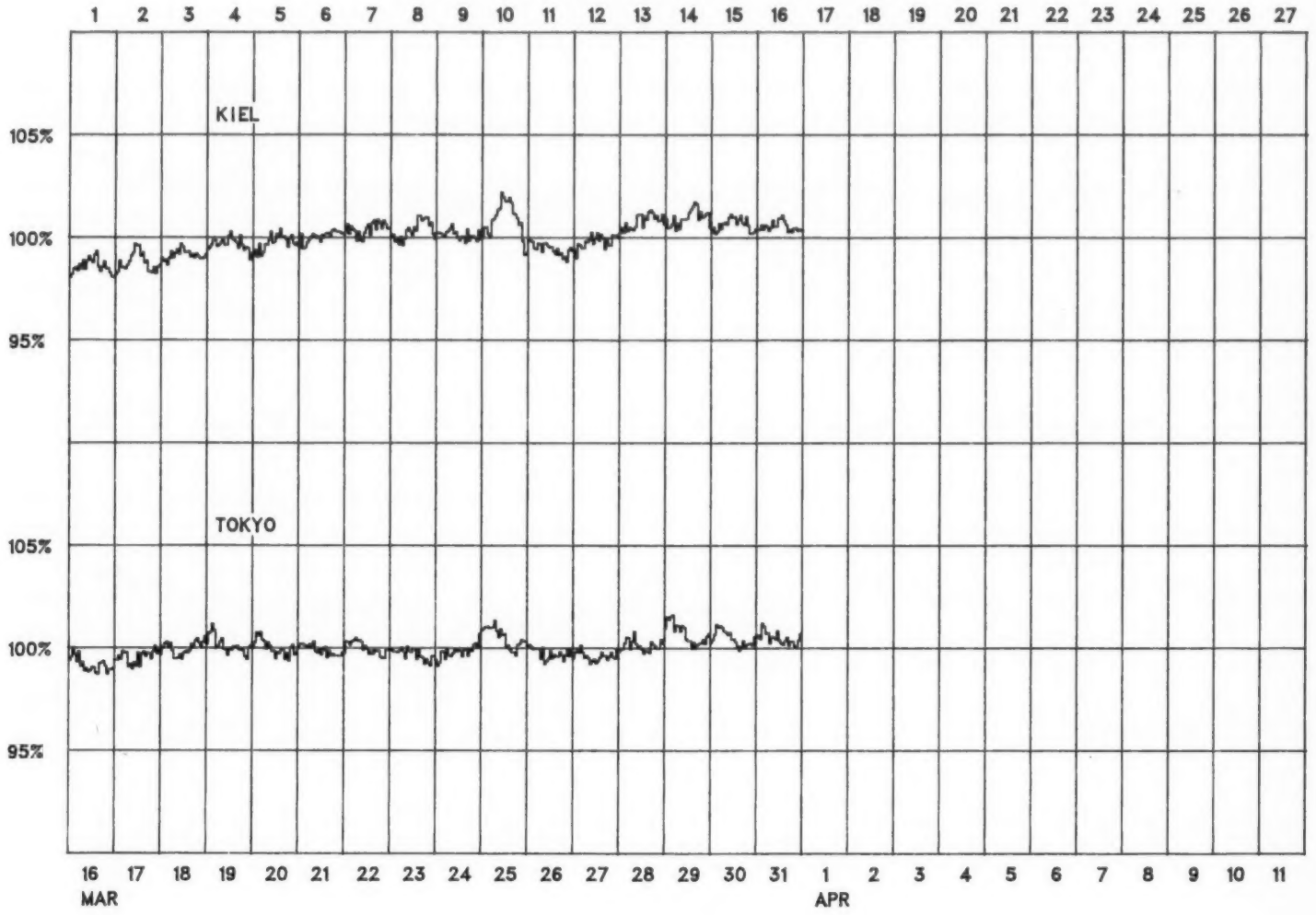
Bartels Rotation 2044 (February 1983–March 1983)



99
Mar 83

COSMIC RAY INDICES
(Neutron Monitor)

Bartels Rotation 2045 (March 1983–April 1983)



GEOMAGNETIC ACTIVITY INDICES

MARCH 1983

Day		Kp Three-Hourly Indices 1 2 3 4	5 6 7 8	Sum	Ap	Cp	Km Three-Hourly Indices 1 2 3 4	5 6 7 8	Am	aa N	aa S	aa M	
1		4- 3+ 3 3	3+ 3 4+ 4+	28	21	1.1	3 3- 3- 3	3 3 4- 4	34	47	32	27 52	
2	D1	7 7- 7 6-	6- 6 5 5	48	86	1.8	6- 5- 6- 5	5 5+ 4+ 4+	100	111	79	118 72	
3	D4	6 4+ 5- 4+	4+ 4 4 4-	35+	36	1.4	5- 3+ 4 5-	4 4- 4- 4-	55	62	47	55 55	
4		4+ 4- 4 3-	4- 3 4+ 5	31-	26	1.2	3+ 3- 3+ 2	3 3 4 5-	38	50	32	27 55	
5		4- 4+ 4+ 4+	4 4- 3 5-	32	28	1.2	3 4 4- 4-	4 4- 3 4-	42	38	34	36 36	
6	Q0A	5+ 2 1- 1	1 2 1+ 2-	15	12	0.7	4 2- 1 1	1 3- 2- 1+	17	24	10	22 12	
7	Q5A	4- 2+ 2- 3-	1+ 0 0 1+	13	7	0.4	3- 2 2 3-	2 1- 1 2	14	16	12	20 8	K
8	Q2	3- 1- 0+ 1	2+ 2+ 2- 2-	13-	6	0.3	3- 1 1- 1+	3- 2+ 2 2-	15	13	10	7 16	CC
9	Q4A	3 2+ 1 1	1+ 2 3- 1+	15-	8	0.4	2+ 1+ 1 1+	2- 2+ 3- 2-	13	16	8	9 16	CC
10	Q3A	1- 1- 2- 2-	1 2- 3+ 2+	13	7	0.3	1- 1 2 2+	2 3- 3+ 2+	17	15	13	9 20	
11		3- 2- 2 3+	4 2+ 4+ 6	26+	24	1.2	2+ 2- 2 3	4- 2+ 4- 5-	34	47	31	23 56	
12	D2	5 3- 3 4	3+ 6 6- 7+	37	53	1.6	4 2 3- 4-	3 5+ 5- 6-	62	71	44	34 81	
13		6 4 4 3+	3 2+ 3- 2	27+	24	1.2	5- 3+ 3 3	3 3- 3- 2	33	45	24	46 23	
14		3- 5- 5+ 3+	4+ 3 4 3-	30	26	1.2	2+ 4- 4 3	4- 3- 4- 2+	36	43	32	39 36	
15		3- 3+ 3- 3	3+ 4- 2+ 3	24	15	0.9	2+ 3 3 3	3 3 2+ 3-	26	30	19	25 25	
16		1 4- 2+ 2-	4 1+ 2- 2+	18	11	0.6	1+ 3 2 2	3+ 1+ 1+ 2+	18	19	13	15 18	
17	Q9A	4- 3+ 2+ 3-	1 1 1+ 3-	18	11	0.6	3- 2+ 3 3	2- 2 2+ 3	21	24	14	25 14	
18		2 2 2+ 2-	2- 4+ 4 6-	24-	20	1.0	3- 2- 3- 3-	2+ 4+ 4- 5-	37	43	21	14 51	
19		5- 5 4+ 4-	4 4- 3 3+	32-	28	1.2	4+ 4+ 4- 4	4 3+ 3 3+	49	42	34	41 34	
20		5- 6- 3 2+	4- 5- 5- 4-	32+	32	1.3	4+ 5- 3 2	3+ 4 4+ 3+	47	50	34	34 50	
21		4+ 3- 2+ 2	2+ 2+ 3 2	21	12	0.7	4 2+ 2- 2	2 3- 3+ 2+	25	28	22	26 25	
22	Q6A	3 3 2 1	2- 1+ 2+ 2+	17-	9	0.5	3 3 2- 2-	2+ 2+ 2+ 2+	19	19	12	14 17	
23	Q7A	3- 3- 3 1+	2 2 2- 2-	17	9	0.5	2+ 2 3- 2-	2 3- 2+ 2	18	17	15	16 17	
24	Q8A	3 3+ 2- 2-	2- 2- 3+ 2+	19-	10	0.6	3- 2 2- 2-	2 2- 4- 2+	19	23	14	16 22	
25	D3	4- 5+ 6+ 6-	5+ 4+ 5- 4+	40-	50	1.6	3+ 4 5+ 5+	5 4 4+ 4	73	52	77	65 65	
26		5- 4 2 1-	2 1 2 2	18+	13	0.7	4 3+ 2+ 1+	2 1+ 2 2-	21	21	17	28 11	
27	Q1	0+ 0 0+ 2-	1+ 1- 1- 1+	6+	3	0.1	0+ 0+ 1- 1+	1+ 1 1 2	7	7	4	4 8	C
28		2 4 5+ 5-	4 6- 4+ 5-	35-	37	1.4	1+ 4- 5- 4	4- 5- 4- 4+	53	57	55	50 62	
29	D5	5 5+ 5- 4-	4+ 5 5- 4+	37	40	1.4	4 4 4 4-	4 5- 4 4	57	52	56	57 51	
30		3+ 4+ 4+ 4-	3+ 5- 3 5-	31+	27	1.2	3- 4- 3+ 3+	3 4 3 4	39	48	37	40 46	
31		5- 5+ 3+ 5-	4- 3- 4 3	31+	28	1.2	4- 5- 3- 4	4- 3- 4- 3	43	45	48	56 38	
Mean					23	0.95			34.9	38.0	29.1	33.6	

Day	Kn Three-Hourly Indices 1 2 3 4	5 6 7 8	An	Ks Three-Hourly Indices 1 2 3 4	5 6 7 8	As
1	3 3 3- 3	3 3+ 4 4	35	3+ 3- 3- 3	3 3 4- 4	33
2	6 5+ 6+ 5+	5+ 5 5- 4+	117	5 4+ 5- 5-	5- 6- 4 4+	84
3	5 3+ 4+ 5-	5- 4- 4- 3+	60	5- 3+ 4- 4+	3+ 4- 4- 4-	50
4	3+ 3- 4- 2	3+ 3- 4- 5	39	4- 3 3 2	3 3 4 4+	37
5	3 4- 4+ 4	4+ 4 3 4-	48	3 4 3- 4-	4- 3+ 3- 3+	36
6	4+ 2- 1 1	1 3- 2 2-	18	4- 1+ 1 1	1+ 3- 2- 1+	15
7	3 2 1+ 3-	1+ 0 0 1+	12	2+ 2 2+ 3-	2+ 1+ 1+ 2+	17
8	3- 1- 0 1-	3- 2 2- 2-	12	3- 1+ 1 2-	3 3- 2 2	17
9	2 2- 1 1+	2- 2+ 3 2-	14	2+ 1 1- 1	1+ 2+ 3- 1+	12
10	0+ 1- 1+ 2-	1+ 2 3 2+	13	1 1 2+ 3	2+ 3 3+ 2+	21
11	2+ 2- 2 3+	4- 3- 4- 5	37	2+ 2- 2 3	4- 2+ 4 4	31
12	4+ 2+ 3- 4	3 5+ 5+ 6-	69	4- 2 2+ 3	3 5+ 4+ 6-	55
13	5+ 4- 3+ 3	3 3- 3- 2+	41	4- 3 2+ 3	3- 2+ 2+ 2	24
14	2+ 4 5- 3+	4 3 4- 3-	42	3- 3+ 4- 3	4- 2+ 3+ 2+	31
15	2+ 3 3 3-	3 3+ 3- 3-	27	3- 3 3- 3	3- 3- 2+ 2+	24
16	1+ 3+ 2 2	4- 1+ 2- 3-	20	1+ 3- 2+ 2	3 1+ 1+ 2-	16
17	3 2+ 2+ 3-	2- 2- 2 3	20	2+ 2+ 3+ 3	1+ 2 3- 3	23
18	3- 2- 3- 2	2 4+ 4- 5-	34	3 2- 3- 3	2+ 4+ 4- 5	39
19	4- 4 4- 4	4- 4- 3 3+	45	5- 4+ 4 4	4 3+ 3- 4-	53
20	4 5- 3- 2	4- 4- 4+ 3+	46	4+ 4+ 3 2	3 4 4+ 3	48
21	4 3- 2- 2	2+ 3- 3 2+	25	4 2 1+ 2-	2 2+ 4- 3-	25
22	2+ 3- 2 2-	2 2+ 3- 2+	18	3+ 3+ 2- 2-	2+ 2+ 2 2+	21
23	2+ 2+ 3- 1+	2 2+ 2+ 2	17	2+ 2 3- 2	2 3- 3- 2+	19
24	2+ 2+ 2- 2-	2 1+ 3+ 2+	17	3- 2- 2- 2	2 2- 4- 2+	20
25	3+ 4+ 6- 6-	5+ 4- 4+ 4	81	3 4- 5 5	5 4+ 4+ 4-	65
26	4 4- 2+ 1+	2 1 2+ 2-	23	4 3 2+ 1+	2- 1+ 2- 2-	20
27	0 0 0 1+	1+ 1 1- 2-	6	1- 1- 1+ 2-	1+ 1 1 2	8
28	2- 4- 5 4	4- 5- 4- 4+	55	1+ 3+ 4+ 4	4- 5- 4- 4+	50
29	4+ 4 4+ 3+	4 5 4 4	60	4 4 4- 4	4 5- 4 4-	55
30	3- 4 4- 4-	3 4 3+ 4-	42	3- 3+ 3+ 3	3 4- 3- 4	35
31	4- 5- 3 4+	4 3- 4- 3+	48	4- 4+ 2+ 4-	3+ 3- 4- 3-	37
Mean			36.8			32.9

NOTE: All aa indices are provisional from 1 January 1981 until further notice, because of the change in the Southern Hemisphere observatory.

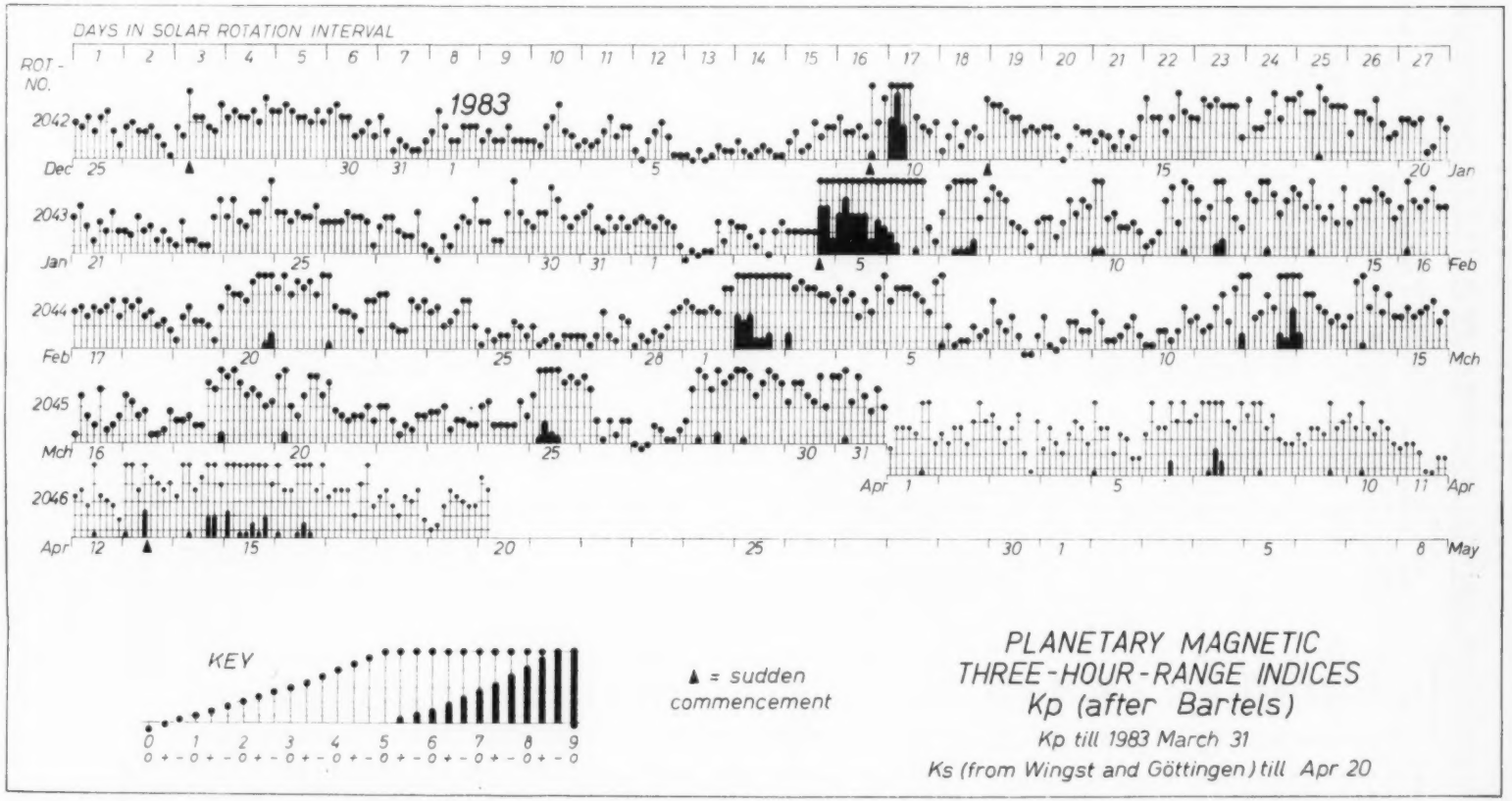
The Geophysikalisches Institut, University of Goettingen, prepares the quiet (Q) and disturbed (D) days, geomagnetic planetary 3-hour-range indices (Kp), magnetic character figures (Cp) and average amplitude (Ap). The 10 most quiet days [Q1-Q0(10)] and the five most disturbed days (D1-D5) are ordered from most quiet and from most disturbed, respectively. A or K means "not really quiet" (A implies Ap>6 and K implies Ap<6 with either one Kp>30 or two Kp values >3-). An asterisk means "not really disturbed" (Ap<20).

Geomagnetic 3-hour indices Km, Kn, Ks and daily mean values Am, An, As and indices aa are prepared by M. Menvielle of the Institut de Physique du Globe, Paris, France. For aa indices, daily north (N) and south (S) values and half-daily antipodal mean (M) values are given. C indicates really quiet 24- and 48-hour intervals centered on 1200 UT; K indicates similar periods with some slightly disturbed 3-hour intervals.

DAILY AVERAGE INDICES A_p

DAY	1982 APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	1983 JAN	FEB	MAR
1	20	22	20	18	12	9	28	36	2	11	11	21
2	42	30	18	10	55	12	24	32	4	7	5	86
3	48	45	9	6	26	21	10	21	9	11	7	36
4	22	19	7	2	15	32	10	8	13	9	59	26
5	21	14	6	4	18	39	9	9	11	6	143	28
6	18	6	14	15	25	199	19	11	3	3	47	12
7	5	4	14	21	107	88	35	4	29	4	43	7
8	12	5	9	15	6	12	21	12	27	9	18	6
9	10	8	16	10	23	50	6	8	18	20	18	8
10	61	5	51	10	27	10	15	11	46	78	23	7
11	47	9	32	36	28	13	14	20	20	11	24	24
12	15	6	59	48	22	14	15	16	14	18	33	53
13	11	6	62	144	10	15	34	18	6	8	35	24
14	6	8	24	153	7	14	30	12	8	8	28	26
15	10	20	26	36	3	12	8	13	11	22	25	15
16	11	10	10	50	6	12	14	9	13	25	30	11
17	19	12	6	24	16	11	21	6	62	25	16	11
18	12	20	7	24	16	30	23	12	41	32	14	20
19	8	12	24	28	10	28	17	10	34	17	10	28
20	20	8	18	24	12	24	14	6	46	14	41	32
21	32	8	9	11	15	76	11	25	37	12	36	12
22	18	4	20	16	24	135	8	30	42	8	21	9
23	9	2	20	12	17	26	5	36	26	10	17	9
24	15	4	21	50	18	22	5	83	19	22	14	10
25	52	8	17	22	20	13	15	54	14	16	6	50
26	7	24	16	27	20	84	30	26	9	12	5	13
27	24	54	32	27	11	42	16	17	18	10	7	3
28	21	56	27	21	12	14	10	28	21	10	8	37
29	31	35	19	22	38	9	35	32	20	16		40
30	30	35	39	23	28	12	27	13	15	19		27
31		31		25	16		34		7	13		28
MEAN	22	17	22	30	21	36	18	21	21	16	27	23

GEOMAGNETIC ACTIVITY INDICES


DAYS IN SOLAR ROTATION INTERVAL
ROT - NO.
1983
2042
Dec 25 30 31 1 5 10 15 20 Jan
2043
Jan 21 25 30 31 1 5 10 15 16 Feb
2044
Feb 17 20 25 28 1 5 10 15 Mch
2045
Mch 16 20 25 30 31
Apr 1 5 10 11 Apr
2046
Apr 12 15 20 25 30 1 5 8 May
KEY
0 1 2 3 4 5 6 7 8 9
0 + - 0 + - 0 + - 0 + - 0 + - 0 + - 0 + - 0 + - 0 + - 0
▲ = sudden commencement
PLANETARY MAGNETIC THREE-HOUR-RANGE INDICES
Kp (after Bartels)
Kp till 1983 March 31
Ks (from Wingst and Göttingen) till Apr 20

PRINCIPAL MAGNETIC STORMS

MARCH 1983

Sta	Geomag Lat	Commencement Day	Time (UT)	Type	SC Amplitudes D (Min)	H (Gamma)	Z (Gamma)	Maximum 3-Hour K Index Day(3-Hour Periods)	K	Ranges D (Min)	H (Gamma)	Z (Gamma)	End Day	Hour (UT)
COL	64.6N	01	19--	..	..	..	..	02(3,4) 03(4) 05(4)	7	296	1850	1390	06	03
SIT	60.0N	01	23--	..	..	..	..	02(3)	8	--	--	1110	06	03
WIT	54.2N	01	1154	SC*	- 20	- 3	0	02(1,2,3,6) 04(7,8)	6	40	245	185	04	23
IRK	41.0N	01	0218	SC	4.4	15	0	02(1,4,5,6) 03(4)	6	36	204	81	03	21
JAI	17.3N	01	0400	..	..	..	..		-	8	248	36	03	02
UJJ	13.5N	01	0400	..	..	..	..		-	7	258	28	03	02
ABG	09.5N	01	0400	..	..	..	..	02(6)	6	8	278	30	03	02
TRD	01.1S	01	0400	..	..	..	..		-	5	338	122	03	02
HER	33.7S	01	20--	..	..	..	..	02(6)	6	34	169	121	03	03
GNA	43.2S	01	02--	..	..	..	..	02(3)	6	29	160	170	04	04
CNB	43.9S	01	20--	..	..	..	..	02(4)	6	32	177	132	03	20
KGL	56.5S	01	1153	SC	3	25	5	02(6)	9	140	830	470	03	04
GUA	04.0N	02	0031	..	..	..	..	02(4)	6	--	210	30	02	21
GUA	04.0N	03	0733	..	..	..	..	03(5)	5	--	50	20	03	20
HYB	07.6N	04	2000	..	..	..	..	05(5,6)	5	3	86	21	06	03
HER	33.7S	04	19--	..	..	..	..	04(8)	5	14	70	48	04	22
HYB	07.6N	10	0500	..	..	..	..	12(6,8) 14(3)	5	6	194	29	14	22
WIT	54.2N	11	18--	..	..	..	..	12(7)	8	42	220	165	--	--
FRD	49.6N	11	12--	..	..	..	..	12(8) 13(1)	6	30	165	124	16	--
GUA	04.0N	11	0454	..	..	..	..	11(4)	5	--	100	10	12	04
COL	64.6N	12	07--	..	..	..	..	12(6)	7	362	1550	1050	15	22
IRK	41.0N	12	0800	..	..	..	..	12(8)	6	32	129	86	14	22
GUA	04.0N	12	1649	..	..	..	..	12(8)	6	--	80	10	13	13
HER	33.7S	12	16--	..	..	..	..	12(8)	6	19	90	118	13	02
KGL	56.5S	12	10--	..	..	..	..	12(6)	9	148	1200	305	13	18
FRD	49.6N	17	2011	SC	- 1	- 8	1	18(8) 19(2) 20(1)	5	22	100	51	26	06
COL	64.6N	18	15--	..	..	..	..	18(6) 19(5) 20(5,6)	6	230	1500	820	21	18
WIT	54.2N	18	17--	..	..	..	..	18(8)	6	31	160	85	20	23
HYB	07.6N	18	0500	..	..	..	..	18(6,8)	5	4	124	24	20	22
HER	33.7S	18	17--	..	..	..	..	18(8)	5	13	85	97	19	03
COL	64.6N	24	19--	..	..	..	..	25(4,5)	7	229	1460	860	26	05
FRD	49.6N	24	18--	..	..	..	..	25(3)	6	33	162	117	--	--
GNA	43.2S	24	18--	..	..	..	..	25(4,5)	6	28	170	210	26	03
SIT	60.0N	25	03--	..	..	..	..	25(4)	7	--	--	740	26	03
IRK	41.0N	25	0543	SC	2.1	24	2	25(3,4,7)	6	34	168	76	26	10
BJI	28.5N	25	0544	SC	.6	12	0	25(3)	7	16	163	44	26	10
HON	21.1N	25	0542	SC	..	6	3	25(3)	6	8	185	32	26	05
JAI	17.3N	25	0545	SC	- .3	15	- 3		-	7	165	37	26	03
UJJ	13.5N	25	0545	SC	- .1	19	- 4		-	6	173	37	26	03
ABG	09.5N	25	0545	SC	- .4	17	- 7	25(3)	6	5	186	44	26	03
HYB	07.6N	25	0544	SC	- .2	19	- 2	25(4,5)	6	6	203	30	26	10
GUA	04.0N	25	0544	SC*	..	13	- 5	25(3)	6	--	150	20	25	21
GUA	04.0N	25	2234	..	..	40	- 11	26(1)	6	--	110	40	26	09
TRD	01.1S	25	0545	SC	- .1	44	45		-	3	282	173	26	03
HER	33.7S	25	05--	..	..	..	..	25(3,7) 26(1)	5	26	145	117	26	03
CNB	43.9S	25	04--	..	..	..	..	25(3)	6	28	174	103	26	03
KGL	56.5S	25	0543	SC	- 6	- 40	- 5	25(5)	7	74	560	345	26	06
HYB	07.6N	27	2100	..	..	..	..	28(3)	6	7	270	32	31	22
COL	64.6N	28	04--	..	..	..	..	28(6)	7	424	1910	1040	01	21
WIT	54.2N	28	06--	..	..	..	..		-	28	140	110	30	01
IRK	41.0N	28	0400	..	..	..	..	28(3,6,8) 29(6)	6	27	160	41	30	21
BJI	28.5N	28	04--	..	..	..	..	28(3)	6	12	185	44	31	22
JAI	17.3N	28	0400	..	..	..	..		-	8	229	44	29	03
UJJ	13.5N	28	0400	..	..	..	..		-	7	236	38	29	03
ABG	09.5N	28	0400	..	..	..	..	28(3)	7	8	251	36	29	03
GUA	04.0N	28	0408	..	..	..	..	28(3)	6	--	180	60	28	20
TRD	01.1S	28	0400	..	..	..	..		-	--	--	--	29	03
HER	33.7S	28	04--	..	..	..	..	28(3) 29(6)	5	30	176	122	30	01
GNA	43.2S	28	04--	..	..	..	..	28(3,6) 29(3,4,5)	5	15	120	100	29	20
CNB	43.9S	28	04--	..	..	..	..	28(3,6) 29(4) 31(4)	5	18	158	51	01	20
KGL	56.5S	28	0706	SC				28(5,8) 29(1,8)	6	65	420	340	30	06

Reports were received from the following observatories:

ALIBAG, BEIJING, CANBERRA, COLLEGE, FREDERICKSBURG, GNANGARA, GUAM, HERMANUS, HONOLULU, HYDERABAD, IRKUTSK, JAIPUR, KERGUELEN, SITKA, TRIVANDRUM, UJJAIN, WITTEVEEN

SUDDEN COMMENCEMENTS AND SOLAR FLARE EFFECTS

MARCH 1983

PRELIMINARY REPORT ON RAPID VARIATIONS

Sudden Commencements (ssc)

1	11	54	A: COI; B: AMS CZT KGL; C: WIT BDV (si: A: WNG - bps: A: MPO)
25	05	44	A: COI LNP; B: KNY MPO KGL; C: BDV MMB KAK HTY AMS CZT DUM (sfe: CLF)
28	07	06	B: MPO CZT; C: CLF KGL (si: A: COI)

Solar Flare Effects (sfe)

10	12 26	-	12 36	SOD
16	03 42	-	04 00	KNY
17	09 10	-	09 30	WNG
17	10 05	-	10 13	NGK
17	13 34	-	14 05	WNG BDV MPO (ssc: B: COI)
18	01 57	-	02 06	LNP
18	04 39	-	05 10	KNY LNP
26	13 12	-	13 38	SOD

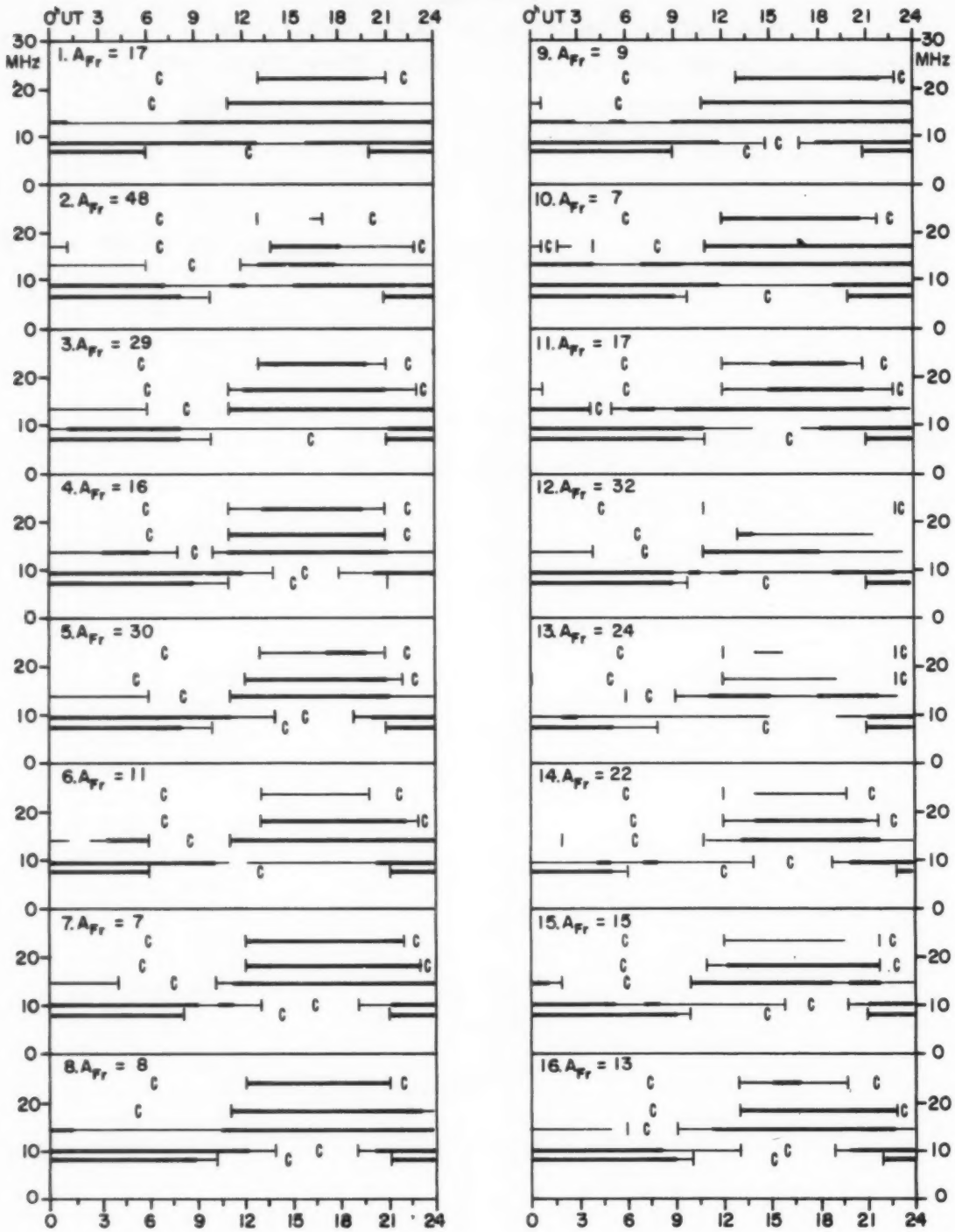
Reporting Observatories:

SOD DOB NUR WNG WIT NGK HAD BDV CLF MMB AQU EBR COI FRD KAK

HTY KNY LNP MPO AMS CZT KGL DUM

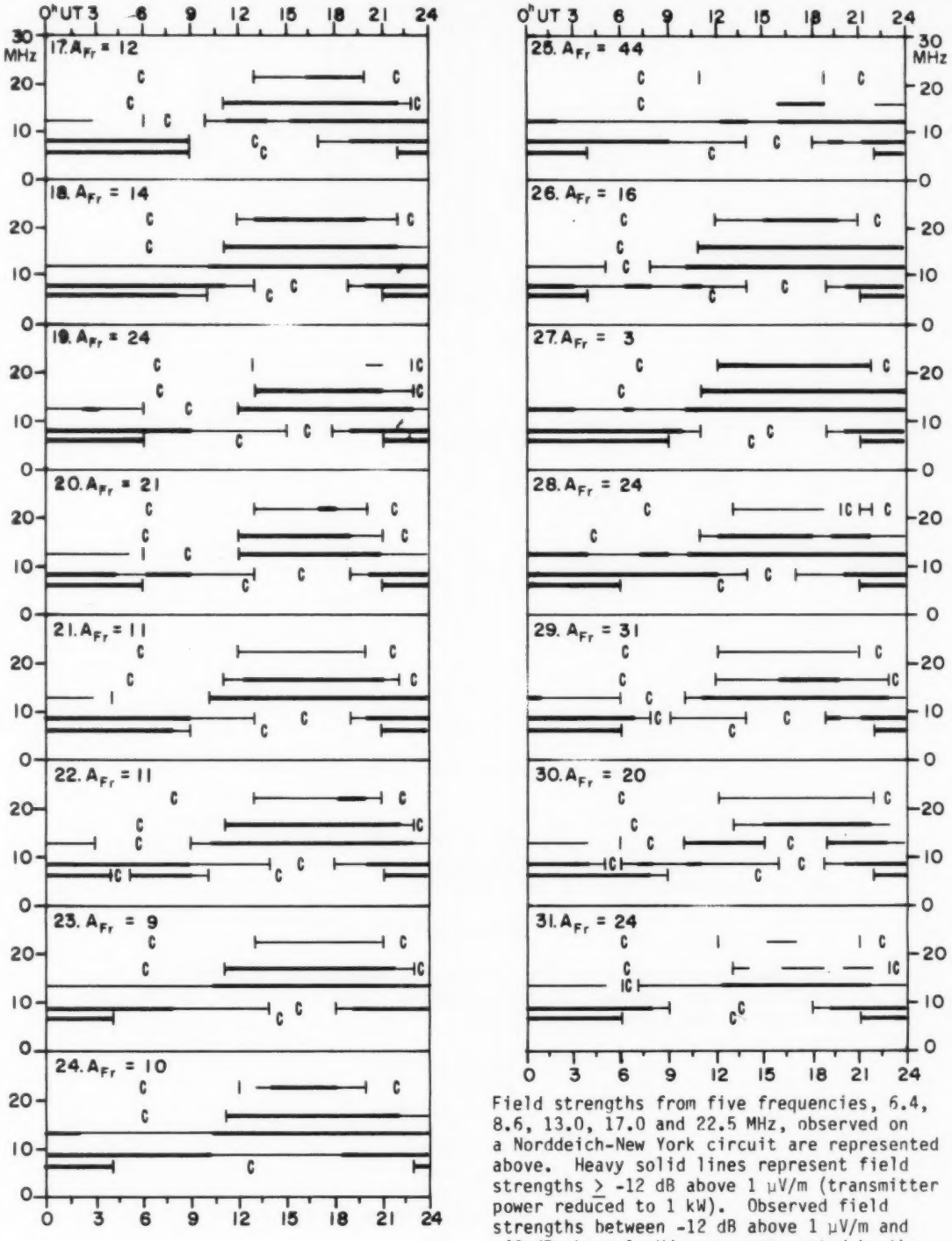
TRANSMISSION FREQUENCY RANGES -- NORTH ATLANTIC PATH

MARCH 1983



TRANSMISSION FREQUENCY RANGES -- NORTH ATLANTIC PATH

MARCH 1983



Field strengths from five frequencies, 6.4, 8.6, 13.0, 17.0 and 22.5 MHz, observed on a Norddeich-New York circuit are represented above. Heavy solid lines represent field strengths $\geq$ -12 dB above 1 μV/m (transmitter power reduced to 1 kW). Observed field strengths between -12 dB above 1 μV/m and -40 dB above 1 μV/m are represented by the fine line.

RADIO PROPAGATION QUALITY INDICES
March 1983

DAY	TOKYO	NEW YORK	TEHERAN	OSLO	BRACKNELL
1	8.0	7.3	6.0	6.6	7.3
2	6.3	3.7	4.7	4.9	6.9
3	7.2	5.9	8.7	8.6	7.6
4	7.5	6.1	7.6	7.2	6.9
5	5.8	5.6	7.2	5.4	4.9
6	6.8	6.2	7.5	6.1	6.6
7	7.1	6.8	7.4	6.7	6.5
8	7.9	8.1	8.6	7.4	6.8
9	7.5	8.8	6.3	7.4	7.7
10	7.6	7.9	5.9	5.8	6.0
11	7.1	6.2	8.7	6.2	6.6
12	3.9	0.4	0.0	2.5	2.9
13	2.2	0.0	0.7	1.8	1.6
14	3.9	1.9	4.7	4.8	4.0
15	5.2	3.1	8.6	5.5	5.0
16	5.9	3.5	7.4	4.8	4.9
17	5.1	4.9	6.9	5.1	4.9
18	6.0	6.1	5.3	5.5	5.3
19	6.0	3.4	7.3	5.1	4.6
20	4.9	3.9	6.6	3.8	5.3
21	5.9	3.4	6.6	4.2	4.6
22	5.5	3.9	7.3	5.5	6.0
23	6.1	5.5	8.1	6.1	6.3
24	6.1	6.2	5.3	6.1	5.5
25	4.1	1.2	5.7	3.4	4.3
26	6.4	6.3	5.0	5.0	5.0
27	7.7	7.6	5.0	6.6	6.4
28	6.2	4.5	7.3	6.0	6.1
29	3.6	3.2	4.9	4.7	4.8
30	5.0	3.6	6.6	6.3	6.2
31	4.6	2.7	6.6	5.8	5.6
MEAN	5.9	4.8	6.3	5.5	5.6

CALCULATION OF QUALITY INDICES (Q)

From all 24 hourly field strength values and from all frequencies of the same circuit a median field strength value is calculated (FD). This daily value is compared with the average value (FA) of the preceeding 27 days (1 sun rotation).

$$Q = 6.0 + 20 \log(FD/FA)/3.0$$

The quality indices vary from 0.0 to 9.9 where 6.0 is normal. Conditions are "normal" (index = 6.0), if they correspond to the average of the preceeding 27 days.

Scale for Quality Indices

0.0 - 1.0 = very poor
1.1 - 3.0 = poor
3.1 - 5.0 = fair
5.1 - 7.0 - normal
7.1 - 9.0 = good
9.1 - 9.9 = very good

SGD 465 Part I (Prompt)

LATE DATA

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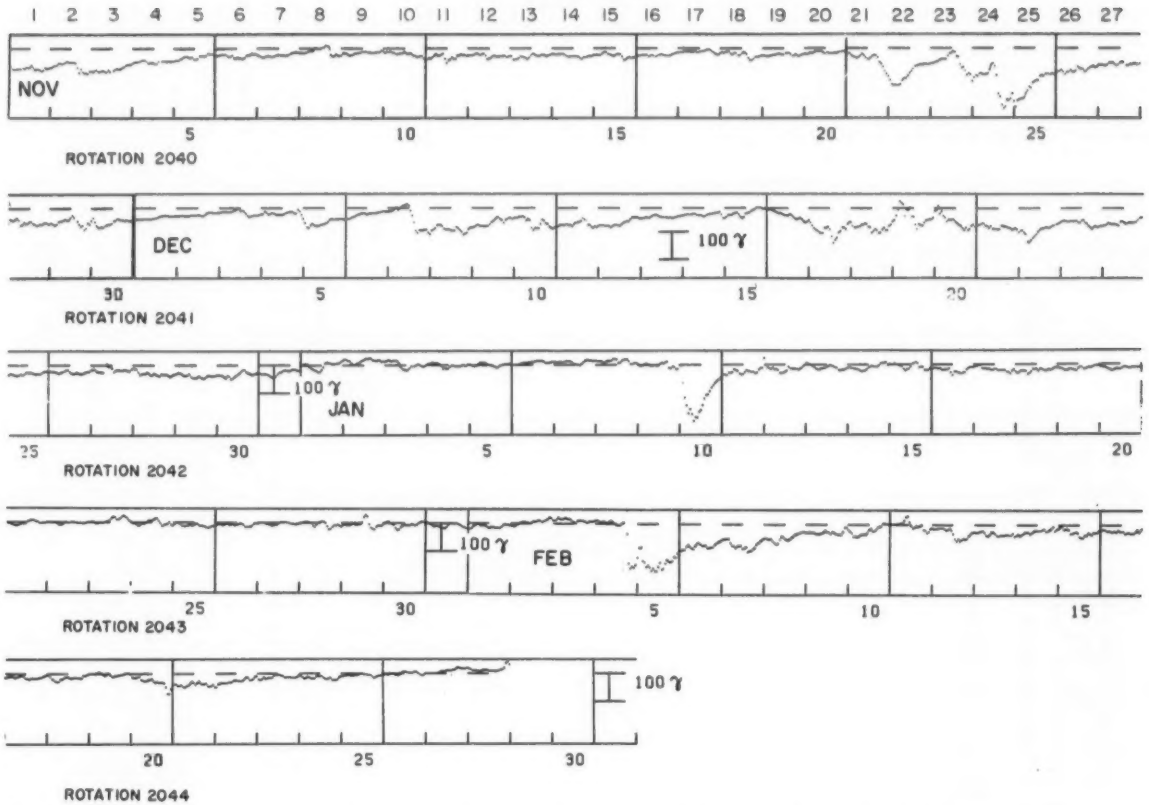
GEOMAGNETIC ACTIVITY INDICES

Hourly Equatorial Dst

by Bartels Rotation



Note: Both the sensitivity indicator placed on the last day of the month and the zero reference level change from month to month.

HOURLY EQUATORIAL Dst VALUES (PROVISIONAL)

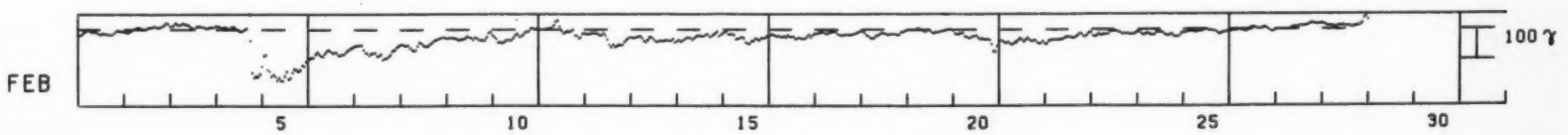
NASA/GODDARD SPACE FLIGHT CENTER

FEBRUARY 1983

(Time-UT)

(Units-Gammas)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-20	-17	-10	-6	-2	-3	-8	-9	-6	-10	-14	-17	-13	-14	-15	-16	-16	-17	-12	-6	-3	-6	-6	-8
2	-9	-10	-9	-4	0	3	5	7	4	2	-1	2	6	6	8	11	8	5	8	11	15	22	19	11
3	10	14	22	16	15	17	21	17	16	14	8	4	0	9	11	10	9	7	4	4	8	8	8	12
4	12	9	5	6	8	4	0	7	10	5	0	-5	-6	-5	0	4	51	-36	-141	-159	-152	-156	-146	-120
5	-85	-83	-132	-137	-154	-148	-155	-168	-159	-168	-169	-153	-138	-163	-159	-140	-127	-133	-136	-132	-117	-120	-104	-106
6	-94	-91	-91	-80	-74	-82	-87	-88	-78	-69	-67	-72	-78	-75	-77	-85	-84	-82	-81	-73	-67	-63	-59	-55
7	-52	-51	-52	-51	-66	-76	-78	-85	-78	-77	-76	-87	-85	-81	-99	-94	-93	-88	-81	-71	-66	-59	-54	-45
8	-48	-51	-53	-51	-59	-65	-70	-67	-53	-42	-45	-51	-55	-54	-50	-45	-39	-35	-32	-30	-27	-25	-26	-29
9	-28	-26	-28	-28	-30	-34	-34	-32	-31	-27	-20	-26	-28	-34	-26	-28	-34	-34	-36	-35	-25	-11	-8	-18
10	-24	-31	-43	-41	-44	-42	-36	-34	-35	-35	-27	-18	-13	-23	-22	-17	-9	-7	-6	3	4	1	2	1
11	1	0	1	2	3	4	6	15	27	30	10	-5	-13	-9	-5	-8	-4	-1	-19	-20	-29	-25	-14	-11
12	-15	-15	-14	-11	-11	-11	-14	-19	-18	-12	-20	-33	-51	-58	-50	-58	-53	-50	-52	-49	-40	-32	-27	-26
13	-27	-28	-25	-23	-21	-28	-38	-41	-34	-25	-26	-32	-39	-41	-37	-38	-38	-36	-35	-37	-38	-31	-43	-35
14	-34	-40	-37	-32	-27	-26	-27	-34	-28	-22	-19	-21	-22	-21	-17	-15	-24	-22	-18	-13	-7	-22	-17	-13
15	-8	-6	-16	-16	-14	-18	-32	-30	-28	-24	-29	-43	-46	-47	-38	-37	-29	-32	-36	-28	-28	-27	-21	-20
16	-16	-16	-19	-23	-20	-24	-25	-22	-26	-19	-24	-24	-24	-32	-28	-27	-30	-31	-30	-24	-17	-26	-18	-13
17	-14	-10	-10	-8	-11	-15	-11	-9	-7	-6	-9	-16	-17	-20	-17	-16	-16	-17	-17	-14	-13	-10	-7	-5
18	-6	-11	-19	-21	-27	-29	-28	-20	-19	-14	-11	-13	-14	-18	-15	-14	-15	-15	-16	-15	-7	-8	-4	-1
19	0	0	-1	-2	2	5	1	-3	-7	-5	0	-4	-9	-12	-8	-8	-6	-5	-4	-2	1	1	1	-3
20	-13	-15	-14	-11	-10	-22	-24	-28	-26	-22	-21	-19	-27	-32	-29	-32	-32	-32	-34	-48	-72	-72	-54	-40
21	-36	-39	-44	-43	-41	-48	-49	-44	-41	-35	-28	-33	-40	-33	-27	-35	-38	-37	-35	-44	-46	-44	-33	-48
22	-47	-38	-35	-33	-34	-34	-34	-31	-32	-29	-24	-25	-25	-26	-28	-25	-19	-13	-14	-23	-22	-18	-10	-9
23	-20	-24	-20	-13	-19	-17	-15	-15	-14	-7	-4	-6	-5	-8	-9	-15	-13	-14	-13	-15	-15	-15	-12	-7
24	-8	-13	-18	-16	-12	-14	-18	-18	-18	-10	-8	-10	-9	-15	-19	-21	-17	-15	-23	-24	-24	-21	-13	-10
25	-10	-8	-7	-6	-7	-9	-8	-6	-6	-5	-1	0	-3	-4	-5	-6	-7	-12	-16	-12	-9	-8	-7	-7
26	-4	-4	-5	-2	-1	-2	-5	-6	-6	-2	4	6	6	3	2	1	3	6	0	1	-4	-7	-7	-1
27	0	0	0	0	0	0	1	3	7	8	7	9	12	10	11	13	14	19	22	18	17	17	17	20
28	17	15	10	11	10	9	7	9	13	12	14	11	9	10	9	7	3	11	13	15	20	37	42	31



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Late
Feb 83

SUDDEN COMMENCEMENTS AND SOLAR FLARE EFFECTS

FEBRUARY 1983

PRELIMINARY REPORT ON RAPID VARIATIONS

Sudden Commencements (ssc)

4	16	15	A: DOB NUR WNG WIT NGK VAL HAD DOU CLF MMB AQU EBR COI TOL FRD KAK HTY KNY LNP MPO GNA AMS CZT KGL DUM
19	04	40	B: DOB WNG FRD; C: AQU EBR TOL - bp: B: MPO

Solar Flare Effects (sfe)

3	05	42	-	TAN
3	05	58	- 07 20	MMB KAK HTY KNY LNP
4	08	48	- 08 57	WIT
5	13	37	- 14 00	WNG
7	03	42	-	TAN
8	08	52	-	TAN

Reporting Observatories:

DOB NUR WNG WIT NGK VAL HAD DOU CLF MMB AQU EBR COI TOL FRD KAK HTY KNY

LNP TAN MPO GNA AMS CZT KGL DUM

C O S M I C R A Y I N D I C E S
(Neutron Monitors)
December 1982

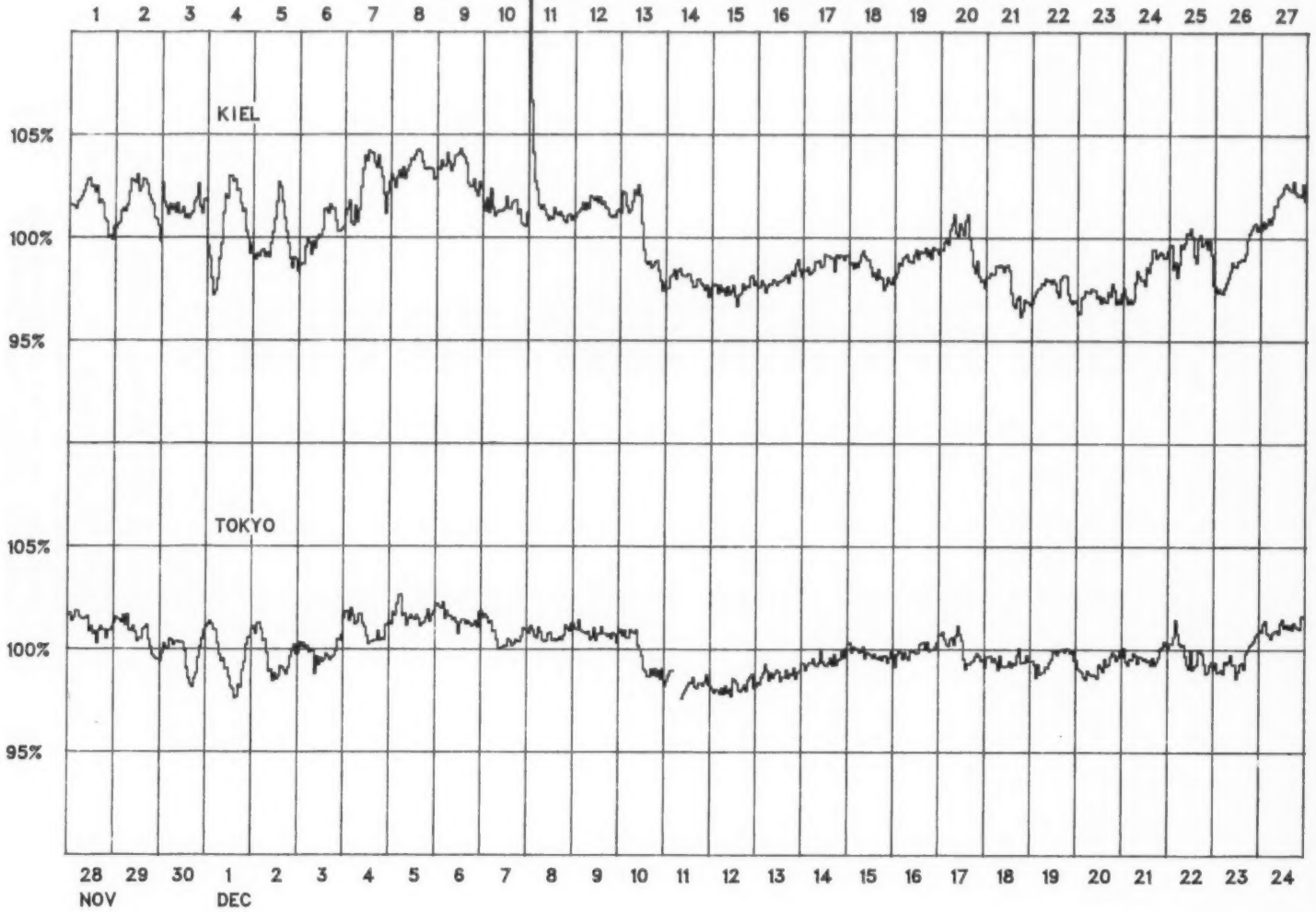
ERRATA

Dec 1982	TOKYO Average (cts/h)/100
1	3438.7
2	3444.5
3	3447.6
4	3489.7
5	3509.2
6	3505.7
7	3477.5
8	3478.2
9	3480.3
10	3445.9
11	3395.9
12	3388.9
13	3409.2
14	3433.0
15	3446.1
16	3449.8
17	3455.2
18	3433.0
19	3436.5
20	3424.1
21	3440.7
22	3445.5
23	3435.6
24	3490.2
25	3490.2
26	3486.9
27	3470.0
28	3430.7
29	3444.5
30	3468.2
31	3484.5
MEAN	3454.1

For less than 24-hour coverage, parentheses enclose the number of hours for which data are available. For Climax and Huancayo, parentheses enclose the number of section hours whenever the sum of both sections falls below 40 hours.

COSMIC RAY INDICES
(Neutron Monitor)

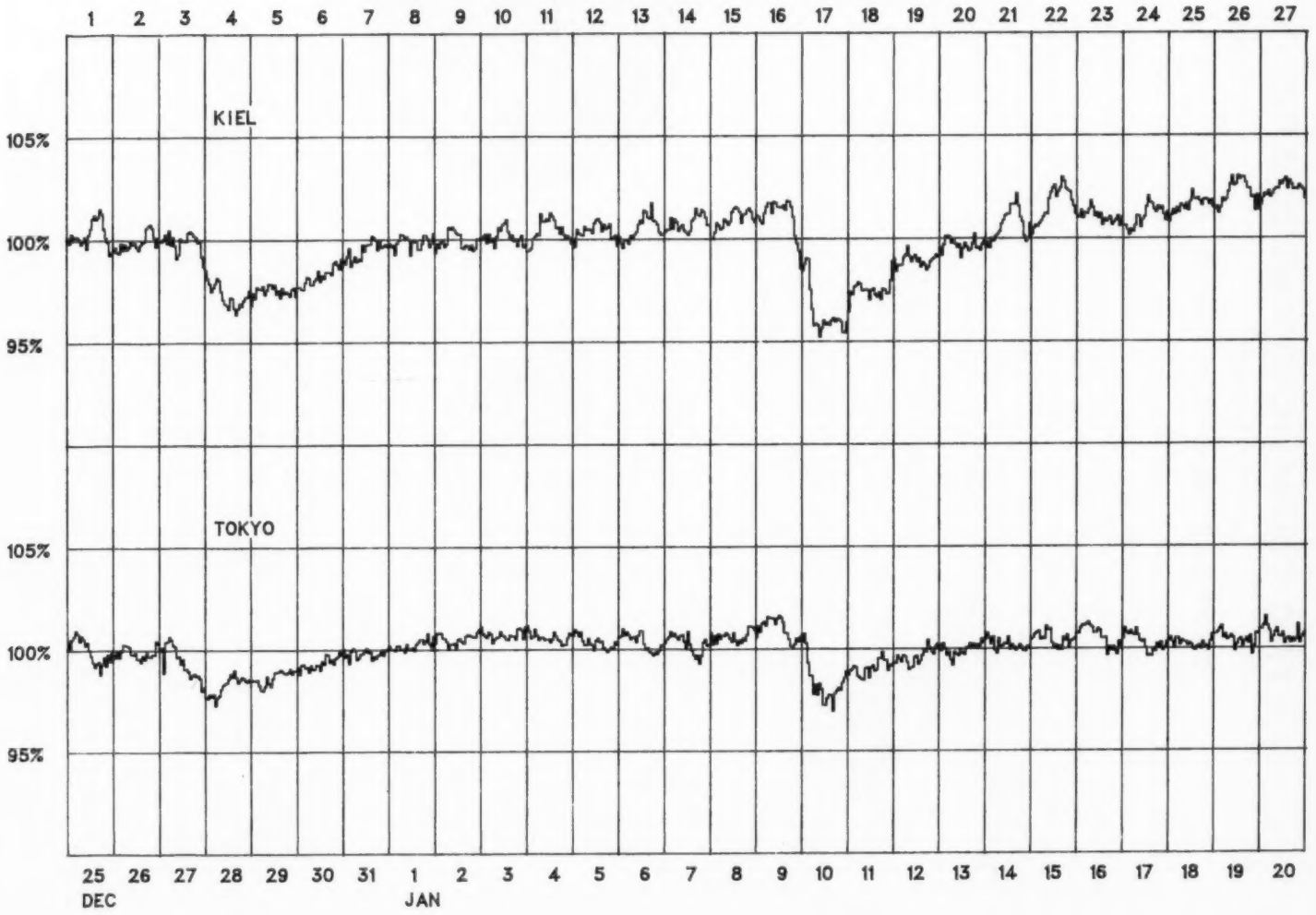
Bartels Rotation 2041 (November 1982–December 1982)



NOV DEC

COSMIC RAY INDICES
(Neutron Monitor)

Bartels Rotation 2042 (December 1982–January 1983)



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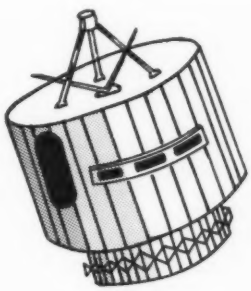
DATA ANNOUNCEMENT

SPACE ENVIRONMENT DATA from the SMS & GOES SATELLITES

The Space Environment Monitor instrument package on-board all SMS/GOES satellites has provided magnetometer, energetic particle, and soft X-ray data continuously since July 1974. Two SMS/GOES satellites operate simultaneously in the Earth's equatorial plane. They travel in geosynchronous orbit (6.67 Earth radii) and are generally located at 75° and 135° west longitude. This trajectory allows the detectors an unobstructed view of the Sun for all but the few dozen hours per year that the Earth eclipses the Sun. The time resolution for all three sensors is approximately 3 seconds, which permits one month's data from each sensor to be stored on a single 9-track, 1600-BPI, binary tape. Plots are available on microfilm.

MAGNETOMETER

A twin fluxgate spinning sensor allows representation of the Earth's magnetic field in three mutually perpendicular components: H_p, H_e and H_n. H_p is parallel to the satellite spin axis, which is itself perpendicular to the satellite's orbital plane. H_e lies parallel to the satellite-Earth center line and points earthward. H_n is perpendicular to both H_p and H_e, and points westward. Field strength changes as small as 0.2 gamma can be measured.



PARTICLE DETECTOR

Solid state detectors with pulse height discrimination measure protons from 0.8 to 500 MeV, alpha particles from 4.0 to 392 MeV, and electrons with kinetic energies greater than or equal to 2.0 MeV. Since solar protons and alpha particles in these energy ranges accelerated in solar flares can reach the vicinity of Earth, they pose a hazard to manned space flight and to high-altitude aircraft. They can as well significantly affect the high-latitude ionosphere.

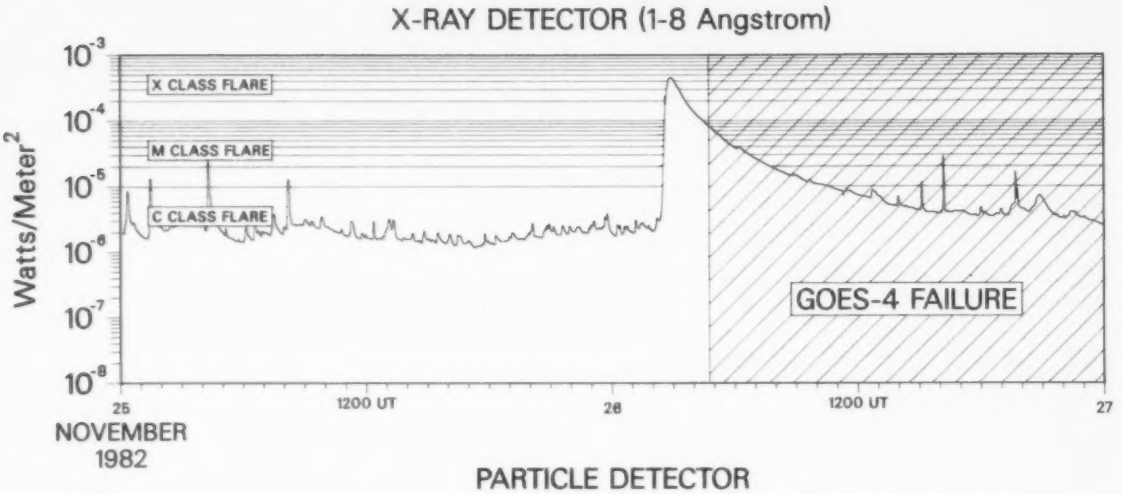
X-RAY DETECTOR

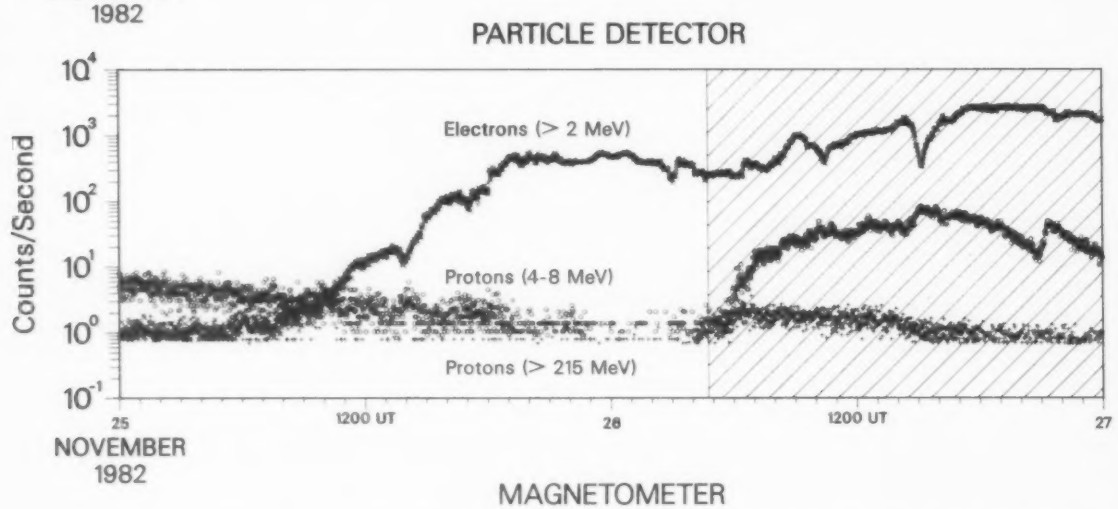
Ion chamber detectors provide whole Sun fluxes for the 0.5-to-4 and 1-to-8 Angstrom X-ray wavelength bands. These observations furnish a sensitive means of detecting the start of solar flares and thereby changes in the dayside ionosphere.

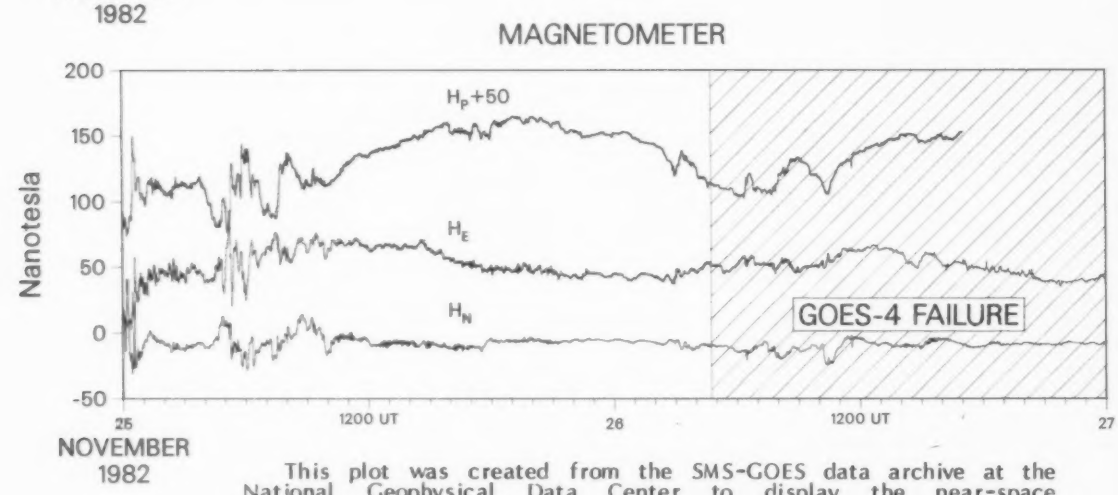
Address your inquiries to Mrs. Viola Miller, National Geophysical Data Center, NOAA code D631, 325 Broadway, Boulder, Colorado 80303, USA (Telephone (303) 497-6136, FTS 320-6136).

GOES-2 SPACE ENVIRONMENT MONITOR

(108° West Longitude)







This plot was created from the SMS-GOES data archive at the National Geophysical Data Center to display the near-space environment coincident with the failure of the GOES-4 satellite. See the inside back cover of this issue of "Solar-Geophysical Data" for more information concerning this valuable archive.